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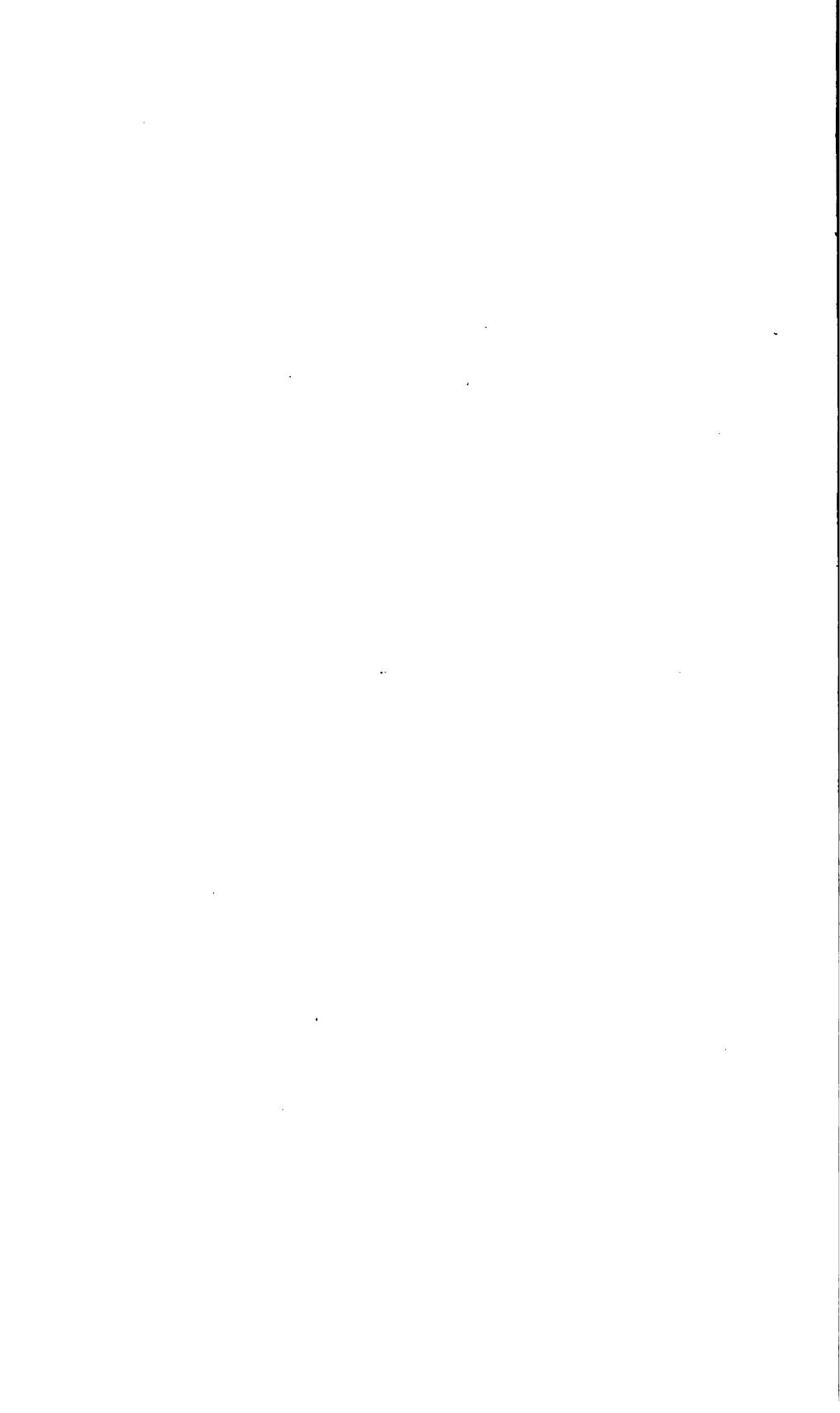


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GIVING ITS

HISTORY,
CLIMATE,
MINERAL WEALTH,
EDUCATIONAL,
AGRICULTURAL AND
INDUSTRIAL
ADVANTAGES.

VIRGINIA:

A

HAND-BOOK.



PREPARED
BY

THOMAS WHITEHEAD,
Commissioner of Agriculture.





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STATE BOARD OF AGRICULTURE.

VIRGINIA:

A HAND-BOOK

GIVING ITS HISTORY, CLIMATE, AND MINERAL WEALTH;
ITS EDUCATIONAL, AGRICULTURAL AND
INDUSTRIAL ADVANTAGES.

PUBLISHED BY DIRECTION OF THE STATE BOARD OF AGRICULTURE AND
BY AUTHORITY OF LAW.

PREPARED BY
THOMAS WHITEHEAD,
COMMISSIONER OF AGRICULTURE.

VIRGINIA STATE DOCUMENT
Public Documents
University of Virginia Library

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PREFACE.

PREVIOUS to the organization of a State Board of Agriculture the act of Assembly which created the Department of Agriculture required the Commissioner to "prepare, under his own direction, a hand-book describing the geological formations of the various counties of this State, with information as to the general adaptation of the soil of the said counties for the various products," etc. Under this law several hand-books of value were issued by former Commissioners of Agriculture.

Now all appropriations for the Department of Agriculture can only be expended by direction of the State Board, and for the purposes set out in the original act of Assembly. In 1888 the Board directed the Commissioner to prepare and publish 5,000 copies of a hand-book, which, while complying with the law in its structure, should be a general description of the resources of the State, with a particular account of advantages peculiar to the State, accompanied by facts and reasons which would influence the best class of immigrants. This book was issued under the title of "Virginia As She Is," and, like the previous hand-books, the issue was speedily exhausted. Numerous inquiries from foreign countries and from every section of the Union in regard to the resources and advantages of the State, condition of society, nature of government, opportunities for education, means of transportation, character of productions, number and size of cities and their manufactures and trade, induced the Board to order the issue of this present Hand-Book, which is now given to the public. The work is unique, being partly compilation, partly select quotations; much statistical, much the statements of many different correspondents rewritten and blended with original matter by the Commissioner of Agriculture. Space does not permit making specific quotations, giving the authors' names for all the work of others used—sometimes a large paragraph, often less than a line; often something written by three or four scientific authors applied to one subject, sometimes only to one point of the subject, and not greatly varying. Condensation required the editor to compile the facts and statements into one paragraph, and to use his own language in constructing the paragraph. Sometimes the statistics are taken from one author and the scientific principles from another.

Determined to make the facts stated in this book susceptible of proof by the records, to make no statement of resources or advantages that could be fairly gainsaid, the editor has sought out the facts in regard to the State in all the phases of its soils, climate, minerals, forests and fields, attainable by research, correspondence, personal examination and inquiry, using all authorities at his command and all statements made or published, subjecting all to strict and rigid examination. Desiring no credit and claiming no merit in this laborious work except for the manner of its construction, by which, with but little original writing, reliable facts of all the resources and advantages of the State have been plainly and succinctly set forth, and from which any reasonably educated

PREFACE.

inquirer can gain all the information needed, I desire here to acknowledge that in the making of this book I am indebted to the following gentlemen for ideas and language collected and taken from their various publications: In the geography and geology of the State I have especially relied on the writings of those distinguished Virginia scientists, Professor Rogers, Commodore Maury and Major Hotchkiss. In mineralogy I have freely used those of Rogers, Hotchkiss, Imboden, C. R. Boyd, Professors Kimball, Genth, Campbell, McDonald, McCreath, and Mallet.

Many paragraphs are selected from the former hand-books and reports of the Department of Agriculture, especially in the description of the separate counties, and I have also used the county hand-books prepared in the last few years by intelligent and reliable gentlemen under the direction of their boards of supervisors. I am also indebted to the mayors of the cities and presidents of colleges of the State for aid in securing reliable statistics, and to the *Manufacturers' Record* for industrial statistics and the *Southern Planter* for special agricultural facts.

The object of this work and the theory of this book may be stated in a few words to be plainly and correctly to answer fully all the questions which any inquiring immigrant has asked or may ask in regard to the Old Dominion, and thus to correct misrepresentations of our country and people.

THOMAS WHITEHEAD,
Commissioner of Agriculture.

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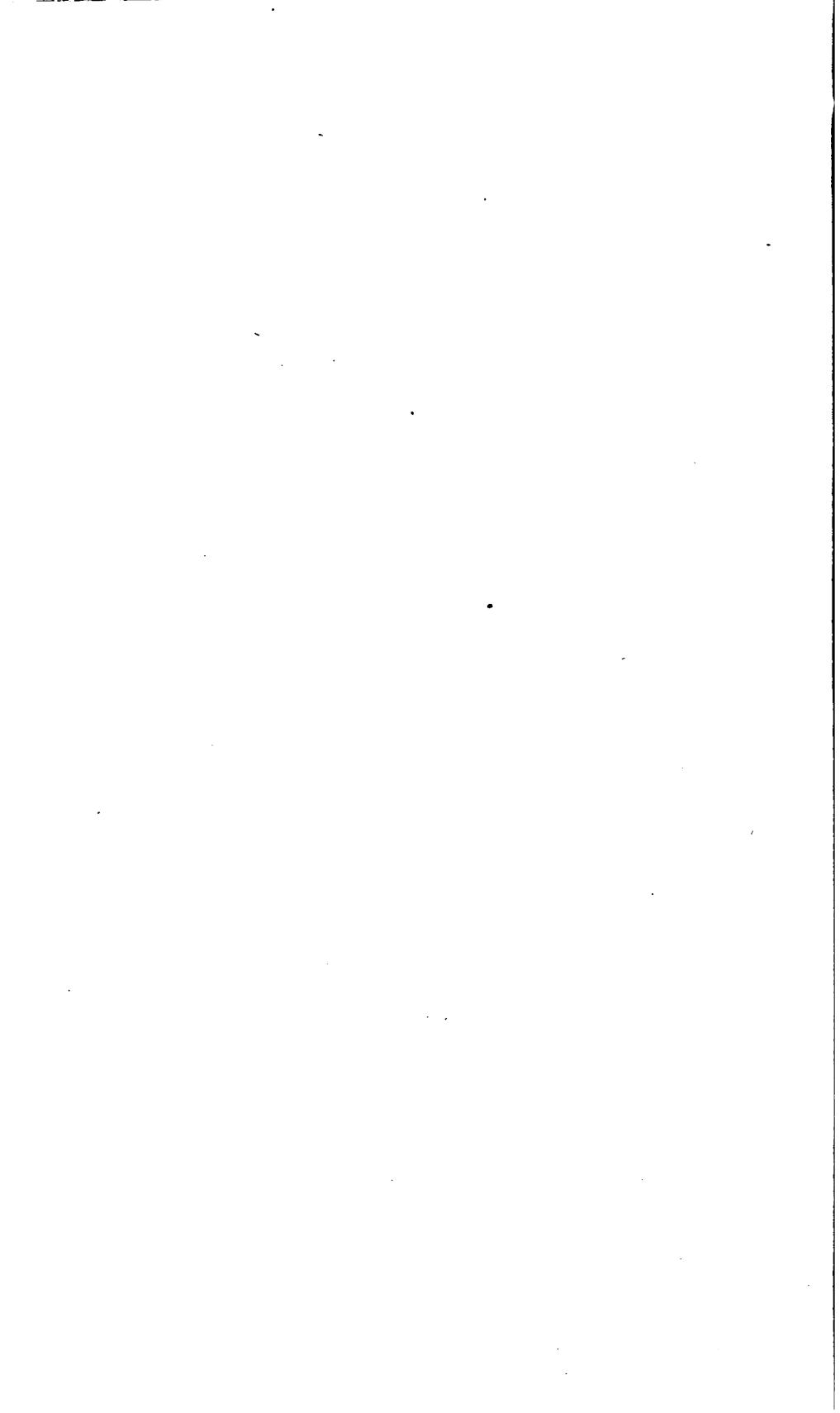
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HAND-BOOK OF VIRGINIA.

GEOGRAPHICAL.

Virginia lies in latitude $36^{\circ} 31'$ to $39^{\circ} 27'$ north, corresponding to Southern Europe, Central Asia, Southern Japan, and California. Its longitude is from $75^{\circ} 13'$ to $83^{\circ} 37'$ west from Greenwich. On the south it adjoins North Carolina for 326 miles and Tennessee for 114 miles, making the line of the State from the Atlantic west 440 miles. On the west and northwest, Kentucky for 115 and West Virginia (by a very irregular line) for 450 miles, form the boundary. On the northeast and north it is separated by the Potomac River and the Chesapeake Bay from Maryland for 205 miles, and by a line of 25 miles across the Eastern Shore. East and southeast it is bordered by the Atlantic for 125 miles. The boundary lines of the State measure about 1,400 miles. On the northwest they are mostly mountain ranges; on the northeast and east, water. The longest line in the State, from the Atlantic southwest to Kentucky, is 476 miles; the longest from north to south is 192 miles.

According to the classification of Maury and Guyot, it is the southernmost of the "Middle Atlantic States." Hotchkiss, in his "Summary," says: "Virginia, as a whole, lies in the region of 'middle latitudes,' giving it a climate of 'means' between the extremes of heat and cold, incident to States south and north of it." Dr. M. G. Ellzey, of Washington, D. C., well says: "The geographical position and physical features of Virginia are eminently favorable to a salubrious air and delightful climate, equally removed from extremes of heat and cold."

The often quoted expression of Captain John Smith, "Heaven and earth never agreed better to frame a place for man's habitation," shows the estimation in which Virginia was held by the early settlers.

The State has an area of land surface of 40,125 square miles and a water surface estimated at 2,325 square miles. Its mountains are the two great chains of the Appalachian Range. The highest and most noted peaks are on the Blue Ridge, standing between the great valley and Piedmont, overlooking the east and west. Their location gives these high peaks a beauty and grandeur not often surpassed.

Its principal inland waters are the Chesapeake and Mobjack Bays and Hampton Roads. Its only considerable lake, Lake Drummond, in the Dismal Swamp, occupies the highest part of the swamp, being 22 feet above mean tide-water, and flows out on all sides through natural and artificial channels into the rivers. It is filled with fish, but no animals harbor or can be found near its banks. The water (called Juniper) is pleasant to the taste; though amber colored, keeps pure for years. Sea-going vessels have for many years secured this water for long voyages. It is used by the United States naval vessels which go out from the navy-yard at Portsmouth. The lake is nearly round and nearly 20 miles in circumference.

PRINCIPAL RIVERS AND BRANCHES.

The waters belonging to the Atlantic system drain six-sevenths of the State. The principal streams of this system are: The Potomac, a wide and deep river, the northeastern boundary of Virginia, with its large branches, the Shenandoah and the South Branch, and its prominent smaller ones, Potomac Creek, Occoquan River, Broad Run, Goose, Catoctin and Opequon Creeks, draining a large area of each of the sections of the State. The Potomac is navigable for 110 miles from where it enters the bay, some 65 miles from the ocean. It has many landings, and lines of steamers and sailing vessels connect with all portions of the country, giving great facilities for cheap transportation to a very extensive and valuable portion of the Northern Neck. The Rappahannock, with its Rapid Anne and numerous other branches flows from the Blue Ridge across Piedmont, Middle and Tidewater, irrigating a large territory. The Rappahannock is navigable to Fredericksburg, 92 miles from its mouth at the bay, some 40 miles from the ocean. The Piankitank, draining only a portion of Tidewater, is navigable for some 14 miles; and Mobjack Bay and its rivers furnish deep entrances to the Gloucester Peninsula. The York, with its Pamunkey and Mattaponi branches, and many tributaries flows through a considerable area of Middle and Tidewater. The York is a wide, deep and almost straight *belt* of water, reaching over 40 miles from the bay to the junction of the Pamunkey and the Mattaponi, which are themselves navigable for many miles for light-draught vessels. The James, with the Chickahominy, Elizabeth, Nansemond, Appomattox, Rivanna, Willis', Slate, Rockfish, Tye, Pedlar, North, Cowpasture, Jackson's, and many other inflowing rivers and streams of all kinds, gathers from a large territory in all the divisions, draining more of the State than any other river. The James is navigable to Richmond. The Elizabeth is a broad arm of the Hampton Roads estuary of the James, extending for 12 miles, the last four of which are expanded as the superb harbor between the cities of Norfolk and Portsmouth. All these flow into Chesapeake Bay. The Chowan, through its Blackwater, Nottoway and Meherrin branches and their affluents, waters portions of Middle and Tidewater Virginia. The Roanoke, called the Staunton, from the mouth of the Dan to the Blue Ridge, receives the Dan, Otter, Pig, and many other streams from the Valley, Piedmont and Middle Virginia, and then flows through North Carolina to Albemarle Sound, joining the Chowan. The sources of the Yadkin are in the Blue Ridge.

The waters of the Ohio, a part of the Mississippi system, drain the remaining seventh of the State; but they reach the Ohio by three diverse ways. The rivers are: The Kanawha or New River, that rises in North Carolina, in the most elevated portion of the United States east of the Mississippi, flows through the plateau of the Blue Ridge, from which it receives Chestnut, Poplar Camp, Reed Island and other creeks and Little River; across the Valley, where Cripple, Reed and Peak's Creeks join it; across Appalachia, from which Walker's, Sinking, Big and Little Stony and Wolk Creeks and East and Bluestone Rivers flow into it, and then through West Virginia into the Ohio, having cut through the whole Appalachian system of mountains, except its eastern barrier, the Blue Ridge. The Holston, through its South, Middle and North Forks, Moccasin Creek, etc., drains the southwestern portions of the Valley and Appalachia; and the Clinch, by its North and South Forks, Copper

Creek, Guest's and Powell's Rivers, and many other tributaries, waters the extreme southwest of the Appalachian Country. These flow into the Tennessee. A portion of the mountain country gives rise to the Louisa and Russell's Forks of the Big Sandy River, and to some branches of the Tug Fork of the same river, the Tug forming the Virginia line for a space. These flow into the Ohio by the Big Sandy.

These are but a few of the thousand or more named and valuable streams of Virginia. They abound in all portions of the State, giving a vast quantity of water-power, irrigating the country, furnishing waters suited to every species of fish, giving channels for the tide and inland navigation, and enlivening the landscapes. Springs are very numerous, many of them of large size. Nearly every portion of the State is well watered.

Virginia has about 1,500 miles of steamboat navigation and as much more for small boats. Its tide-waters afford 3,000 miles of fishing shores and over 2,000 of oyster grounds. The chief cities are Richmond, the capital, population 81,388; Norfolk, the great seaport, population 34,871; Petersburg, on the Appomattox, population 22,680; Lynchburg, on the James, population 19,709; Roanoke, in the valley, 16,159; Alexandria, on the Potomac, population 14,339; Portsmouth, a seaport, population 13,268; Danville, on the Dan, population 10,305; Manchester, across the James from Richmond, population 9,246; and many smaller and well-situated cities of over 5,000 inhabitants. These figures are from the census of 1890.

POPULATION OF THE STATE BY THE CENSUS OF 1890.

Total population.	SEX.		NATIVE AND FOREIGN BORN.		Aggregate white.	NATIVE WHITE.			For'gn white.	Total colored (a)
			Native.	For'gn.		Total.	Native par'nts.	Foreign parents.		
	Male.	F'male.								
1,655,980	824,278	831,702	1,637,606	18,374	1,020,122	1,001,933	976,758	25,175	18,189	635,858

(a) By "colored" is meant not only persons of African descent but also Chinese, Japanese, and civilized Indians.

There are six great natural divisions of Virginia—belts of country extending across the State from northeast to southwest, nearly parallel to each other, and corresponding to the trend of the Atlantic coast on the east, and the Appalachian system of mountains on the northwest. These grand divisions are taken in the order of succession from the ocean northwest across the State: 1st. The Tidewater Country; 2d. Middle Virginia; 3d. The Piedmont Section; 4th. The Blue Ridge Country; 5th. The Great Valley of Virginia; 6th. The Appalachian Country. These divisions not only succeed each other geographically, but they occupy different levels above the sea, rising to the west like a grand stairway. They differ geologically also; therefore they have differences of climate, soil, productions, etc., and require separate consideration in a description of the State.

TIDEWATER VIRGINIA

Is the eastern and southeastern part of the State that on the south borders North Carolina 104 miles; on the east has an air-line border of 120 miles along the Atlantic; on the west is bounded by 150 miles of the irregular outline of

the Middle Country—(this would be 184 miles if it took in the mere edge of Tidewater along the Potomac up to Georgetown). The shore line of the Potomac River and the Chesapeake Bay for 140 miles, and a line of 25 miles across the Eastern Shore, separate it from Maryland on the north. The whole forms an irregular quadrilateral, averaging 114 miles in length from north to south, and 90 in width from east to west, making an area of some 11,000 square miles.

The latitude is from $36^{\circ} 33'$ to $38^{\circ} 54'$ north, corresponding to that of the countries bordering on the northern shores of the Mediterranean. The longitude is from $75^{\circ} 13'$ to $77^{\circ} 30'$ west from Greenwich—that of Ontario, in Canada, on the north, and of the Bahamas, Cuba, etc., on the south.

This is emphatically a tidewater country, since every portion of it is penetrated by the tidal waters of Chesapeake Bay and its tributary rivers, creeks, bays, and inlets. The united waters of nearly all this section, with those that drain 40,000 more square miles of country, or the drainage of 50,000 square miles (an area equal to that of England), flow out through the channel, 12 miles wide, between Capes Charles and Henry, and 50 or 60 miles from the land runs the ever-flowing Gulf Stream.

THE MIDDLE COUNTRY

Extends westward from the “head of tide” to the foot of the low, broken ranges that, under the names of Catocton, Bull Run, Yew, Clark’s, Southwest, Carter’s, Green, Findlay’s, Buffalo, Chandler’s, Smith’s, etc., mountains and hills, extend across the State southwest, from the Potomac, near the northern corner of Fairfax county, to the North Carolina line, forming the eastern outliers of the Appalachian system, and that may with propriety be called the Atlantic Coast Range.

The general form of this section is that of a large right-angled triangle, its base resting on the North Carolina line for 120 miles; its perpendicular, a line 174 miles long, extending from the Carolina line to the Potomac; just east of and parallel to the meridian of $77^{\circ} 30'$ west, is the right line along the waving border of Tidewater, which lies east; the hypotenuse is the 216 miles along the Coast Range before mentioned, the border of Piedmont, on the northwest—the area of the whole, including the irregular outline, being some 12,470 square miles.

The latitude of this section is from $36^{\circ} 33'$ to 39° ; the longitude 70° to $79^{\circ} 40'$ west. So its general situation and relations are nearly similar to those of Tidewater.

The Middle Country is a great, moderately undulating plain, from 25 to 100 miles wide, rising to the northwest from an elevation of 150 to 200 feet above tide, at the rocky rim of its eastern margin, to from 300 to 500 along its northwestern. In general appearance this is more like a plain than any other portion of the State. The principal streams, as a rule, cross it at right angles; so it is a succession of ridges and valleys running southeast and northwest, the valleys often narrow and deep, but the ridges generally not very prominent. The appearance of much of this country is somewhat monotonous, having many dark evergreen trees in its forests. To many portions of the Middle Country the mountain ranges to the west, of the deepest blue, form an agreeable and distant boundary to the otherwise sober landscape. There are a few prominences like Willis’, Slate River and White Oak Mountains farther east, only prominent because in a champaign country.

PIEDMONT VIRGINIA

Is the long belt of country stretching for 244 miles from the banks of the Potomac and the Maryland line southwest, along the eastern base of the Blue Ridge Mountains, and between them and the Coast Range, to the banks of the Dan at the North Carolina line; it varies in width from 20 to 30 miles, averaging about 25; its approximate area is 6,680 square miles.

Its latitude corresponds with that of the State, $36^{\circ} 33'$ to $39^{\circ} 27'$ north; its longitude is from $77^{\circ} 20'$ to $80^{\circ} 50'$ west.

This Piedmont Country is the fifth step of the great stairway ascending to the west; its eastern edge, along Middle Virginia, is from 300 to 500 feet above the sea; then come the broken ranges of the Coast Mountains, rising as detached or connected knobs, in lines or groups, from 100 to 600 feet higher. These are succeeded by the numberless valleys, of all imaginable forms, some long, straight and wide; others narrow and widening; others again oval and almost enclosed, locally known as "Coves," that extend across to and far into the Blue Ridge, the spurs of which often reach out southwardly for miles, ramifying in all directions. Portions of Piedmont form widely extended plains. The land west of the Coast Ranges is generally from 300 to 500 feet above the sea, and rises to the west, until at the foot of the Blue Ridge it attains an elevation of from 600 to 1,200 feet. The Blue Ridge rises to from 2,000 to 4,000 feet above the sea; at one point near the Tennessee line it reaches a height of 5,530 feet; its general elevation is about 2,500, but its outline is very irregular.

Numerous streams have their origin in the gorges of the Blue Ridge, and most of them then flow across Piedmont to the southeast until near its border, where they unite and form one that runs for a considerable distance along and parallel to the Coast Mountains, and takes the name of some of the well-known rivers that cross Middle and even Tidewater Virginia, like the Roanoke or Staunton, and the James. Some of these rivers break through the Blue Ridge from the Valley, making water gaps in that formidable mountain barrier, as the Potomac, the James and the Roanoke; but they all follow the rule above given in their way across this section.

This is a genuine "Piedmont" country—one in which the mountains present themselves in their grand as well as in their diminutive forms—gradually sinking down into the plains, giving great diversity and picturesqueness to the landscape. Few countries surpass this in beauty of scenery and choice of prospect, so it has always been a favorite section with men of refinement in which to fix their homes. Its population is 31 to the square mile, giving some 21 acres each.

THE GREAT VALLEY OF VIRGINIA

Is the belt of limestone land west of the Blue Ridge, and between it and the numerous interrupted ranges of mountains, with various local names, that run parallel to it on the west at an average distance of some twenty miles, that collectively are called the Kitatinny or North Mountains. This valley extends in West Virginia and Virginia for more than 330 miles from the Potomac to the Tennessee line, and 305 miles of this splendid country are within the limits of Virginia. The county lines generally extend from the top of the Blue Ridge to the top of the second or third mountain range beyond the Valley proper, so that the political Valley is somewhat larger than the natural one, which has an

area of about 6,000 square miles, while the former has 7,550, and a population of twenty-six to the square mile. The latitude of the Valley is from $36^{\circ} 35' N.$ to $39^{\circ} 28'$; its longitude is from $77^{\circ} 50'$ to $80^{\circ} 16' W.$

While this is one continuous valley, clearly defined by its bounding mountains, it is not the valley of one river, or of one system of rivers, but of five; so that it has four water-sheds and four river troughs in its length along the Valley from the Potomac to the Tennessee line. These valleys and their length in the Great Valley are, from the northeast—

1st. The Shenandoah Valley	136 miles.
2d. The James River Valley	50 "
3d. The Roanoke River Valley	38 "
4th. The Kanawha or New River Valley	54 "
5th. The Valley of the Holston or Tennessee	52 "
	330 miles.

As a whole, the Valley rises to the southwest, being 242 feet above the tide where the Shenandoah enters the Potomac and the united rivers break through the Blue Ridge at Harper's Ferry, and 1,687 feet where the waters of the Holston leave the State and pass into Tennessee. The entire Valley appears then as a series of ascending and descending planes, sloping to the northeast or the southwest. That of the Shenandoah rises from 242 to 1,863 feet along the line of its main stream, in 136 miles, looking northeast; those of the James slope both ways, from the Shenandoah summit to the southwest, and from the Roanoke summit to the northeast, and so on. This arrangement gives this seventh great step a variety of elevations above the sea from 242 to 2,594 feet, or even 3,000, in a great enclosed valley, sub-divided into very many minor valleys, giving "facings" in all directions; for the whole Valley has a very decided southeastern inclination, to be considered in this connection, its western side being from 500 to 1,000 feet in surface elevation above its eastern, presenting its mass to the sun, giving its streams a tendency to flow across it toward the east, as the result of its combined slopes, and making the main drainage way hug the western base of the Blue Ridge. A moment's reflection will show that this is a well-watered country, having a wealth of water-power and drainage and irrigation resources almost beyond estimate.

The aspect of this region is exceedingly pleasant. The great width of the Valley; the singular coloring, and wavy, but bold outline of the Blue Ridge; the long, uniform lines of the Alleghany Mountains, and the high knobs that rise up behind them in the distance; the detached ranges that often extend for many miles in the midst of the Valley like huge lines of fortification—all these for the outline, filled up with park-like forests, well cultivated farms, well built towns, and threaded by bright and abounding rivers, make this a charming and inviting region.

THE BLUE RIDGE SECTION,

For two-thirds of its length of 310 miles, is embraced in the Valley and Piedmont counties that have their common lines upon its watershed; it is only the southwestern portion of it, where it expands into a plateau, with an area of some 1,230 square miles, that forms a separate political division; still the whole range and its numerous spurs, parallel ridges, detached knobs and foot hills, varying in width from 3 to 20 miles, embracing nearly 2,500 square miles of

territory, is a distinct region, not only in appearance but in all essential particulars. The river, in the gorge where the Potomac breaks through the Blue Ridge, is 242 feet above tide. The Blue Ridge there attains an elevation of 1,480 feet, Mt. Marshall, near and south of Front Royal, is 3,389 feet high; the notch, Rockfish Gap, at the Chesapeake and Ohio Railroad, is 1,996 feet, and James River, where it passes through the Ridge, is 706 feet above tide, or more than twice as high as the Potomac at its passage. The Peaks of Otter, in Bedford County, are 3,993 feet, and the Balsam Mountain, in Grayson, is 5,700 feet, and in North Carolina this range is nearly 7,000 feet above the sea level. These figures show that this range increases in elevation as we go southwest, and every portion of the country near rises in the same manner. At a little distance this range is generally of a deep blue color. The whole mountain range may be characterized as a series of swelling domes, connected by long ridges meeting between the high points in gaps or notches, and sending out long spurs in all directions from the general range, but more especially on the eastern side, these in turn sending out other spurs giving a great development of surface and variety of exposure.

The political division upon the plateau of the Blue Ridge are the counties of Floyd, Carroll and Grayson, all watered by the Kanawha, or New River, and its branches, a tributary of the Ohio, except the little valley in the southwest corner of Grayson, which sends its waters to the Tennessee. The population of this romantic section is 23 to the square mile.

APPALACHIAN VIRGINIA

Succeeds the Valley on the west. It is a mountain country, traversed its whole length by the Appalachian or Alleghany system of mountains. It may be considered as a series of comparatively narrow, long, parallel valleys, running northeast and southwest, separated from each other by mountain ranges that are, generally, equally narrow, long and parallel, and quite elevated. In crossing this section to the northwest, at right angles to its mountains and valleys, in fifty miles one will cross from six to ten of these mountain ranges, and as many valleys. As before stated, a strip of this region is embraced in the Valley counties, as they include the two or three front ranges that have drainage into the Valley; so that some 900 square miles of Appalachia are politically classed with the Valley, leaving 5,720 square miles to be treated of here. This, in Virginia, is an irregular belt of country 280 miles long, varying in width from 10 to 50 miles. Its waters, generally, flow northeast and southwest, but it has basins that drain north and northwest, and south and southeast. The heads of the valleys are generally from 2,000 to 2,800 feet above tide, and the waters often flow from each way to a central depression—that is, from 600 to 1,200 feet above sea level—before they unite and break through the enclosing ranges. The remarks made concerning the slopes of the Great Valley apply also to this section, except that the Appalachian valleys are straighter.

Appalachia is noted as a grazing country, its elevation giving it a cool, moist atmosphere, admirably adapted, with its fertile soil, to the growth of grass and the rearing of stock of all kinds.

To the unimaginative reader the above statistical, geographical account of Virginia conveys only an idea of so many acres, so many rivers and streams, and so many cities of over five thousand inhabitants. In the limited space of

a "Hand-Book," it is impossible to give one who knows not Virginia "by sight" any absolutely correct conception of the beauty of its rivers and streams; the surpassing sublimity of its mountain ranges; the loveliness of its vallies which need but the foot and hand of intelligent, energetic man to make this "fair land" blossom into abundant wealth and prosperity.

From where the Potomac and the James sweep together out into the ocean, far up through "Tidewater" into beautiful Piedmont, and on and over into the Shenandoah Valley (the pride of Virginia), and out through the Valley of the Southwest where New River seemingly runs contrary to the natural watershed the traveler passes thousands of acres of uncultivated land—uncultivated not because of barrenness, nor want of fertility, but lack of population and money. Virginia, with its magnificent scenery, its healthful climate, its soil capable of bringing to perfection a diversity of merchantable crops and fruits, invites men desiring homes to examine for themselves what the grand old State offers to the world.

GEOLOGICAL.

The geology of Virginia was determined by Prof. W. B. Rogers, the distinguished geologist of the State, in a survey conducted for that purpose from 1835 to 1840, and much of the brief outline here given is condensed from his reports:

The geological formations found in Virginia, like its geographical divisions, succeed each other in belts, either complete or broken, nearly parallel to the coast of the Atlantic. In fact the geographical divisions of the State that have already been given correspond in the main to the different geological formations, and have been suggested by them; hence, those divisions are natural.

The formations developed in Virginia, taken in the order in which they succeed each other and cover the surface, or form the rocks found with the surface, from the Atlantic at the Virginia capes to the northwest across the State, are as follows:

Tidewater.—1. Quarternary; 2. Upper Tertiary; 3. Middle Tertiary; 4. Lower Tertiary. *Middle*.—5. Triassic and Jurassic; 6. Azoic and Granitic. *Piedmont*.—7. Azoic, Epidotic, etc. *Blue Ridge*.—8. Azoic and Cambrian. *The Valley*.—9. Cambrian and Silurian. *Appalachia*.—10. Sub-carboniferous and Devonian; 11. Silurian; 12. Devonian and Sub-carboniferous; 13. Great Carboniferous.

The first "dry land" of the State that appeared was the country between the base of the Blue Ridge and the eastern side of the Middle Country, at the head of tide; its borders being the shores of the ocean east and west. So Middle, Piedmont, and Blue Ridge Virginia are the oldest lands of the State. They are based on granite gneiss and syenite, mica, talc and hornblende slates, argillaceous slates, auriferous quartz, and the region is *Eozoic or primary*. The second formed land was the Great Valley, a broad belt of sea-coast along the shore of a subsiding ocean, where corals abounded, making it a limestone region the Cambrian and lower and upper Silurian, a country with sandstones and limestones of many varieties, together with slates or shales, a part of the Transition or Paleozoic period. So the Valley is the second oldest country in the State. These are followed by the Devonian rocks as third, and these in turn by the Sub-carboniferous as fourth, and carboniferous as fifth, all in Appalachia. The sixth, Triassic, or new red sandstone, is only found as detached masses deposited in depressions of the primary in the Middle Country. The seventh, the last formed portion of the State, is the Tertiary, the entire Tidewater region, if we except the alluvium now forming on the shores.

1. The Quarternary or Post-Tertiary formation is the sandy shore; the mere margin of the Atlantic and the bay.

2. The Upper Tertiary or *Pliocene*, the first step or terrace of the State above the ocean, is the low plain of the Eastern Shore and Norfolk Peninsula where the surface is composed of light colored sands and clays generally of a fine texture

and never enclosing pebbles of large dimension. Underneath are found the other formations in order, and their valuable marls can be reached at no great depth by going through this. The immense piles of shells found along the shores and the refuse fish furnish fertilizers adapted to the soils of this section.

3. The Middle Tertiary or Miocene is the surface of the *second step* of country extending from the western border of the last described formation, where this passes under that to the line running southward from Matthias' Point on the Potomac to Coggins' Point on the James—a line just west of the meridian of 77; from the James south it inclines to the west. This formation generally descending from the surface consists of the following material:

1. Beds of coarse sand and gravel just under the soil sloping in position.
2. Horizontal beds of sand and clay.
3. Yellow marl, underlaid by conglomerate of fragments, with shells nearly entire but water-worn.
4. Yellow marl with friable shells and tenacious clay.
5. Upper blue marl, a clay bluish and of fine texture, rich in shells.
6. Lower blue marl clay, with more sandy materials, more shells, and more varieties.
7. A thin band of pebbles, with ferruginous matter the bottom of the formation.

In some parts of Tidewater some of these strata harden into a sort of lime stone or sand stone, very good for building purposes. Of course the lower tertiary underlies this as this underlies the upper and is overlapped by it.

4. The lower tertiary or eocene. This formation underlies both the others and forms the surface of the remainder of Tidewater west of the line already described as forming the western boundary of the middle tertiary. It is a strip of country, some fifteen miles wide along the "head of tide." The fossils found are unlike the forms now existing. This green sand marl formation in the east pushes its headlands into the middle tertiary, and on the west fills up the ravines between the headlands of sand stone and granite that protrude into it from the Middle Country.

The following section from the banks of the Potomac below Acquia Creek will give an insight into the composition of the group of rocks:

- (1.) The soil.
- (2.) Twenty feet of yellow clay impregnated with sulphates.
- (3.) Five feet of sulphur-colored clay containing shells.
- (4.) Three feet of rock resembling marl in color and composition.
- (5.) Twelve feet of yellowish-gray marl, speckled with green sand and abounding in shells.

Forty feet the level of the Potomac.

In some places the marl of this eocene formation contains so much carbonate of lime from the shells distributed through it, that it has become a lime stone. Here are also beds of blue marl, shell rock, gypseous and acid clays, dark bluish clay and sand containing sulphates of iron and lime. There are also beds of sand and gravel, coarse, and often cemented by iron. In all these there is a great variety of color and composition. The strata are slightly inclined generally to the southeast.

5. The Triassic or new red sand stone is sometimes found as transported fragments from that formation which forms a part of the western boundary of this

section, scattered over the surface of some of the peninsulas southeast from where this rock is found in place.

6. The Azoic or Primary Rocks, which underlie all the others, and also form part of this western border, are sometimes found as headlands thrust into the tertiary or as islands in its surface.

MIDDLE COUNTRY.

The larger portion of this region is Azoic or Primary. The rocks contain no organic remains; they are crystalline in their character, generally stratified, dip at a high angle either to the southeast or the northwest, or are nearly vertical, rarely horizontal, and their exposed edges strike or run northeast and southwest. The strata varies in thickness from the fraction of an inch to many feet. The rocks of this formation are: *Gneiss* (a name given to any crystalline stratified rock composed of quartz and felspar, mixed with smaller quantities of hornblende, mica, or other simple minerals), the most abundant which along the east side of the Middle Country is a grey rock consisting of quartz, felspar, and black mica, with some spangles of white and grains of hornblende—this is the fine Richmond granite. In some of the layers of this rock the felspar predominates, and the rock crumbles on exposure. The finer grained gneiss is generally called granite, the coarser syenite and syenites granite; the former are quartzose, the latter felspathic. Next, going westward, are other varieties of gneiss, more slaty in structure containing more felspar, and hornblende quartz is the flint-rock; felspar is softer and duller in color, hornblende is dark green or black, and are more decayed, sometimes into beds of porcelain clay or kaolin. These are succeeded in the western border of this section by a broad belt of micaceous talcose and argillaceous slates, according to the ingredient predominant in the rock, whether mica, talc or soapstone or alumina. The rocks on the east side of this slaty belt are most micaceous; on the west talcose. In these belts are some beds or small tracts of chloritic gneiss, slate, steatite, serpentine, etc., making spots noted for fertility like the Green Spring country in Louisa county. In the more argillaceous part of this belt, the western side, next to Piedmont, some of the slates become so sandy they pass as sandstones or conglomerates (gneissoid sandstones), and among these are found roofing slates and a fragmentary belt of limestone. Through the centre of this region runs the gold belt where gold is found in quartz veins interstratified with the other rocks. Here are also veins of various iron and copper ores. This formation covers large areas of valuable country in all parts of the world. In this Middle section, as before stated, laid over the other rocks (the granitic ones) or filling depressions in them, are a number of patches of the Triassic and Jurassic or new red sandstone rock, sometimes called the Middle secondary, and generally known as brownstone.

The localities of this are (a) the "Richmond coal field," a large oval area in Chesterfield, Powhatan, Goochland, and Henrico counties, inside Middle Virginia; (b) a small oval territory bordering Tidewater between Ashland and Milford stations on the Richmond and Fredericksburg Railroad and nearly divided by it; (c) a long narrow strip bordering Tidewater from several miles south of Fredericksburg on along the west bank of the Potomac to near Mount Vernon; (d) a large wedge nearly six hundred square miles resting for some twenty miles on the Potomac, and extending southwest between the Middle and Piedmont sections to its apex on the Rapidan, near Orange Courthouse,

with a small outlying portion near that place, and extending and beyond it towards Gordonsville; (e) a curved portion of land extending from Hampden-Sidney College north through Farmville to Willis' River, and northeast along that river to near Cumberland Courthouse; (f) a narrow belt along James River from Scottsville some 15 miles to the southwest; (g) a band of country, some 60 miles long, extending from a point southeast of Campbell Courthouse southwest to the North Carolina line near Danville.

These rocks are of a kind known as sedimentary—composed of particles of sand and earth, and of pebbles derived from other rocks, and deposited by water where they now are. They are in strata, some of coarse conglomerate, with large pebbles, others of finer material making sandstones, slates, and shales, generally dark-brown or red in color, but sometimes gray, brownish-gray or yellow, and greenish-gray. They generally dip but little, being nearly horizontal. The "brecciated marble" of the Potomac is from this formation, as is also the brownstone from Manassas. In this formation are found remains of plants, as lignite or coaly matter, and of fishes, and in the Richmond, Danville, and Farmville portions are valuable beds of rich bituminous coal.

PIEDMONT

Is in the same region of Primary Azoic or Transition rocks as Middle, but they differ much in their characteristics. The *gneiss* of Piedmont, from the Blue Ridge to the Southwest Mountains, is usually of a darker color and coarser texture than that of the Middle Virginia, and it has much more variety in its structure and composition. Generally it contains more or less talc or chlorite, not much mica, and very often hornblende and iron pyrites, the latter a powerful agent in decomposing rock, and with hornblende giving a red tinge to the soil, so that this is often called "red-land district."

Near the base of the Blue Ridge are belts of gigantic *gneiss*; also belts of micaceous, chloritic, argillaceous, and talcose slates, generally narrow with bands and patches of limestone. The Epidotic, or greenstone rocks, form the chief mass of the broken Southwest Mountains or Coast Range Chain, the eastern border of Piedmont. These rocks are of greenish hue, with crystals of epidote and quartz. They weather into a yellowish soil, that changes into orange and red, and is always fertile. Bands of iron ores of various kinds, slates, soapstone, etc., are found throughout this section.

THE BLUE RIDGE

Is the border land between the Azoic Primary and Transition rocks and the fossiliferous ones. Generally its eastern flank and summit, and sometimes a good portion of the western slope, are composed of the *epidotic* rocks before mentioned—more highly epidotic than are those of Piedmont—and so it acquires peculiar geological characteristics. The epidote is found there, compact with quartz, imbedded as amygdaloid, etc. Here are also beds of epidotic granite, of whitish granite, and of syenite, with sandstone and slates of various kinds; but *epidote* is here more abundant than elsewhere, and this, by decomposing, makes the wonderful soil of this mountain range.

The western flank of the Blue Ridge is composed of the rocks of the Cambrian, Potsdam sandstone, Primal, or Formation I., II. and III. of Professor Rogers, for by all these names is known the close-grained white or light-gray sandstone

with beds of coarse conglomerate, brown sandstones, and brownish-olive colored shales here found that once made the Eastern Shore of a great ocean. In this formation are bands of peculiar iron ore and beds of hematite.

THE VALLEY

Is the region of Cambrian or Lower Silurian rocks (Formations 1, 2 and 3 of Rodgers), or from Potsdam to Hudson River formations of New York, inclusive—a country mainly of limestone, slate and shale rocks, a fertile soil and undulating surface. The section across the Valley through Staunton gives some 30 alternating bands of slates and limestones of various kinds; some magnesian, others silicious or rich carbonates; some compact, others flaggy and slaty, etc. Among these are beds of chert, iron ore, umber, lead, zinc, etc. This formation extends northward and forms the rich Cumberland, Lebanon and other valleys of Maryland, Pennsylvania, New Jersey, the Hudson and Mohawk valleys of New York, and the Champlain valley of Vermont; southwest it becomes the valley of East Tennessee, and extends into Alabama, making a great Central Valley some 1,500 miles in length, of unsurpassed fertility and productiveness.

Belonging to the Valley counties, the lines of which extend to the summit of the Blue Ridge, and cross often several ranges of the mountains west, of course, half of the summit of all the western slope of the Blue Ridge has been already described. To it also politically will belong part of the Upper Silurian and Devonian systems, that are more especially referred to in the account of the Appalachian Country. These form long ridges, that rise up and run for great distances in the Valley, like the Massanutten and other ranges, making barriers that divide the Valley lengthways into two parallel valleys. The rocks of the Valley generally dip to the southeast at a high angle. In some places there runs an axis through the Valley, from which the rocks dip both ways—to the southeast and to the northwest—making an anticlinal. The upturned edges of the rocks strike or run northeast and southwest with the Valley.

Fragments of the sub-carboniferous formation are found along the western margin of the Valley, sometimes containing valuable beds of semi-anthracite coal, as in Montgomery, Augusta and other counties. The formation consists of conglomerates, shales, sandstones, etc.

THE APPALACHIAN COUNTRY,

Beginning with the mountains on the west side of the Great Valley, is occupied chiefly by the Upper Silurian and Devonian rocks, from IV. to IX., inclusive. It also shows various outcrops of Lower Silurian and important areas of Carboniferous rocks, comprising sandstones, slates, limestones, coal seams, etc. The sandstones hold up the high parallel ridges or chains of mountains that run unbroken for long distances; the slates and limestones form the rich valleys between. In these rocks are great, continuous bands of hematite and fossil iron ores, among the most abundant and valuable in the world.

The Devonian rocks (or old red sandstone, Rodgers' 8 and 9) are found among those that have been already described, the convulsions of nature having exposed in successive ridges and valleys the different formations. Formation 8 is composed of slates and slaty sandstones, that often appear as low seriated ridges; the slates are black, olive green and reddish, sometimes with calcareous bands, some of the shales containing copperas, alumina, and iron ore.

Formation 9 is known by its red slates and sandstones, alternating with green, yellow, brown and dark grey shales and slaty sandstones and some iron ores. The Sub-carboniferous rocks of Virginia (Formation 10, 11) are confined to narrow belts made up of conglomerates, slates, shales, and limestone running along the southeast flanks of the North Mountains. It is in Formation 10 (Vespertine) that Rodgers locates the coal of Augusta, Botetourt, Montgomery, etc. Formation 11 is very calcareous, and is the repository of the Gypsum and rock salt of Southwest Virginia (Rodgers). This is the equivalent of the Carboniferous limestone of England. Great down-throws and upheavals of the rocks have brought the Carboniferous and Silurian formations in the southwestern portion of the Appalachian side by side, and all the intervening formations are often wanting. Iron ore of good quality is found in the shales of this group.

The Carboniferous or true coal-bearing rocks (Rodgers' 12 to 15) cover but a moderate area of Virginia when compared with that occupied by the other formations; still the State has nearly a thousand square miles of territory that belong to the great Carboniferous in the Southwest, in that portion of it lying north of the Clinch River, and drained by its western branches, and in the Virginia territory drained by the Sandy River with some small adjacent areas. This formation is a group of sandstones, slates, bands of limestone, and seams of coal, that together make the great Appalachian coal field—one of the most remarkable in the world for the number, thickness, quantity, and variety of its seams of bituminous coal, and for their accessibility above water level.

THE SOILS.

The character of the soils of Virginia, as of other countries, is dependent upon its geology. (That understood this becomes easy of comprehension.)

Tidewater is a Tertiary region; its soils are the alluvial deposits—the sands and clay peculiar to its formation. The soil of the low, flat, sandy shores and islands is naturally thin, light, soft; at the same time it is warm and under the influences of a mild climate, a near ocean and bay, and the dense crop of wild bent grass, magothy, bay beans, etc., that grow and decay upon it, it becomes very productive and “quick.”

The salt marshes of this region are rich in the elements of fertility, as is evident by the crops of grass they produce. The soil of the Eastern Shore peninsula is like that already described, only it rests upon a stiff clay, and so retains fertilizers applied to it, and is easily improved. The soils of Norfolk peninsula also belong to this class; they are light, warm, easily tilled, and respond quickly to the influence of fertilizers—all these may be characterized as *garden soils* adapted to the hoe. In all this Upper Tertiary Country there is much salt marsh and swamp land that when properly drained becomes exceedingly productive. In every portion of Tidewater along the streams are first or alluvial bottoms composed of mixed materials, the sediment of the waters. These, when above tide or where protected by embankments, have perpetual fertility.

The second bottoms (a second terrace above the waters) are called the rich lands of the country. They are composed of loams of various qualities, but all highly valuable, and the best soils are scarcely to be surpassed in the original fertility and durability under severe tillage. The subsoil is a dark red or yellow clay, the yellow becoming a chocolate color on exposure, lying not very deep. These soils are stiffer than those of the first bottom; sometimes they are sandy, but all are susceptible of improvement.

In some places there are spots of “shelly” soil where the remains of oysters and mussels have decomposed and mingled with the loam and sand. These are permanently fertile, bringing forth abundantly. Shelly soils could be made any where in this region, for Providence has bountifully supplied the means by which this hint may be taken advantage of.

The first and second bottoms are not far above the water level, and form a comparatively small portion of the country. They are succeeded by the slope, the incline that reaches back to the ridge or water shed of the peninsula. The soil of these slopes, compared with that on the flat ridges, is of a higher grade of fertility, though still far from valuable, generally more sandy than poorer ridge land, and when exhausted by injudicious cultivation, inclined to wash during rains.

“The washing away of three or four inches in depth exposes a sterile sub-soil;” sometimes these soils are productive, but as a rule do not wear. That

they are not wanting in some of the elements of fertility is shown by the dense growth of pine trees that speedily covers these lands, and that they have been made fertile by using the marls and shells that are near by. The same can be done again. There is a large area of this land. The ridge lands are always level and very poor, sometimes clayey, more generally sandy, but stiffer than would be inferred from the proportion of siliceous earth they contain, which is caused by the fineness of its particles. These evils vary between sandy loam and clayey loam.

Numerous shallow basins are found in these soils, which are filled with rain water in winter and are dry in summer. The quantity of land in all Tidewater country that pertains to the "slopes" and "ridges" is very large; but Mr. Ruffin has shown by cultivation and experiments, using the marls of the country as fertilizers, that they can readily be made productive. Captain John Smith observes of the soil of Tidewater, which he knew when in a state of nature in 1607: "The vesture of the earth in most places doth manifestly prove the soyle to be lusty and very rich. . . . Generally, for the most part, it is a blacke sandy mould, in some places a fat shiney clay, and in other places a very barren gravell."

The soils of the MIDDLE Country vary, of course, as the rocks do, which they overlie. In the recently published Geology of New Jersey, speaking of a similar region in that State, it says: "Hitherto the country in which they are found has been considered poor and little capable of improvement. But gradually the farmer has been encroaching upon them and turning these unpromising hills into fruitful fields. It is observed that the rocks are in many places subject to rapid decay, and that in all such localities the soil is *susceptible of high cultivation.*" This report then gives an analysis of three varieties of felspar, common in the composition of the rocks there and also in Middle Virginia, with the following results:

	Soda Felspar.	Potash Felspar.	Soda and Lime Felspar.
Silica.	68.6	64.6	62.1
Alumina.	19.8	18.5	23.7
Soda.	11.8	..	..
Potash. . . . .	..	16.9	..
Lime. . . . .	..	..	14.2
	<hr/> 100.0	<hr/> 100.0	<hr/> 100.0

It has been found that the soda and the soda and lime felspars are more easily decomposed than the potash ones. It will readily appear that a soil containing the ingredients shown in the table must have the elements of fertility; and since these are numerous, and wide belts of these in this section, we find here *upon these*, fertile and productive soils. Along the streams, also, the transported materials of these easily-decomposed rocks have been deposited, giving everywhere rich soils in the bottom lands.

Where the beds of gray and light-brown slate appear, the soil is not productive; but it has been found that lime renders the soil from these fertile. Sometimes these rocks cover considerable areas, and we find these noted for their fertility, like portions of Louisa, Buckingham, and the other counties of this section. There are also calcareous soils found in various portions of the Middle Country, where the patches of limestone before mentioned occur. These are always fertile. Some of the red soils of this section are derived from gneiss

rocks containing sulphuret of iron, but not epidote. Such soils are as noted for sterility as the epidotic ones are for fertility.

The soils of Triassic, or new red sandstone belts, are generally fertile and easily worked. The composition of these rocks in New Jersey shows what they furnish to make a good soil. The red shale of the Triassic, at Brunswick, N. J., gave, by analysis, the following results:

Silicic Acid and Quartz	73.00
Peroxide of Iron	10.00
Alumina	8.20
Lime	4.98
Magnesia	0.90
Potash	0.78
Soda	0.97
Sulphuric Acid	a trace
Water	1.00

Other analyses of other rocks from this formation indicate the presence of a considerable percentage of lime, potash, soda, sulphuric acid, alumina, silica, etc., all valuable ingredients for fertile soils. As a rule the soils on the areas of this formation are among the best in this section.

The soils of Piedmont and of its Southwest Mountain border, as remarked before, are much more epidotic in their character, and therefore naturally more fertile than most of those further east. The red and chocolate soils of this section, formed from the decomposed dark greenish-blue sandstone here found, is generally considered the most fertile. The sandstone contains several per cent. of carbonate of lime. The other soils of this region are grayish or yellowish. These are by no means as fertile as the darker soils; but there are red soils here as in Middle Virginia that are also poor ones, and for the same reasons. The epidotic rocks from which the best soils of this region are formed often contain (says Rogers) 24 per cent. of lime. Hornblende, in decomposing, forms a red soil also that is very fertile, but it contains magnesia, less lime and alumina. The soils of Piedmont are many of them undoubtedly among the most fertile known, and can be made to produce a great variety and abundance of crops. They are loose and easily worked, but care must be exercised in their management since they are easily washed away by heavy rains. If neglected, they are soon covered with a growth of underbrush.

The Blue Ridge is composed of much the same materials as Piedmont, only they are richer in the abundance of green stone rock which impart to the soil of this much expanded mountain range a wonderful fertility, and adapt them to the growth of rich grasses, vines, orchards, and all the usual crops of the country wherever the character of the soil admits of cultivation. The soils in the sandstone belt of the western slope of this range are sandy and poor.

The soils of the Great Valley are quite numerous; they are generally called limestone soils. As this is a limestone region, the prevailing soil is a stiff clayey loam—a durable fertile soil well adapted to the growth of grass and grain. In the slaty belts the admixture of the decomposed aluminous rocks makes a lighter and warmer soil. There are also belts of sandy or gravelly soil that are cold and require cultivation and fertilizers to make them productive, but once redeemed they yield very well. Much the larger portion of the Valley has a naturally good soil, rich in the elements of fertility. The soil, like the rocks, runs in belts with the Valley, and the lean ones are the smaller number. The

streams, as in all limestone regions, are very winding, so that here are a considerable area of *bottom* lands. Washington said of this section and soil that "in soil, climate, and production in my opinion it will be considered if not considered so already, the garden of America." The soils of the Appalachian region are very marked in their character; the sandstone ridges and mountains are very poor, while those made of limestone and some of shales are very rich; some of the slate valleys have very thin and poor soil; others on limestone and red sandstone are very rich indeed. The natural exuberant fertility of some of these broad ridges and narrow valleys is something wonderful; some of the little valleys are appropriately called gardens. This region is so penetrated by streams that it is every where alluvial. Thus it appears that there are soils in Virginia suited to all kinds of production.

IN TIDEWATER

are peat bottom, or *swamp* and *savanna* lands for cranberry culture; *salt marshes and meadows* for grass and cheap grazing; *river marshes*, that reclaimed, are fine hemp lands; plains, with soft and warm soil, for great market gardens and the rearing of delicate fruits; river bottoms, nearly alluvial lands, excellent for cotton, peanuts, sweet potatoes, corn, wheat, oats, or meadows; thin *sandy uplands*, for sheep pastures and for forest plantings. In Middle *clay soils* that produce the finest wheat, mixed sand and clay well suited to general agriculture; *thin lands*, where fruit growing would be remunerative; river low grounds, where great crops of Indian corn and rank tobacco grow from year to year without exhausting their fertility; *light soils*, where the finest kinds of tobacco are produced—lands for root crops, etc., and improved sheep husbandry. In Piedmont, rich upland loams unsurpassed as wheat or tobacco lands, and always good, and where heavy shipping tobacco comes to perfection; lighter soils, where the vine and the apple produce abundantly; the best of lands for dairies and for sheep and cattle raising. In the Blue Ridge, where the natural grasses invite to sheep and cattle grazing, and the high mountain land gives buckwheat and rye in perfection, and the rich, warm soil and sunny exposures are adapted to fruit culture on lands that elsewhere would be too valuable for the plow. In the Valley, the natural blue grass lands, the home of the stock-raiser and dairyman; the *heavy clay lands*, fat in fertilizing ingredients, always repay the labor spent on them in crops of corn and wheat; the *lighter, stony lands*, famous for wheat crops; the poor ridge lands, where sheep rearing should be followed.

IN THE MOUNTAIN REGION

Are great cattle ranges—lands where grass grows naturally, as soon as the trees are cleared away and the sunlight admitted; rich meadow lands in the valleys well suited to dairying; strong corn and tobacco lands along the streams; lands for root crops along the slopes and on the plateaus.

MINERALS.

The mineral resources of the State may be summed up as consisting—

IN TIDEWATER VIRGINIA

Of several kinds of marls, greensand, etc., highly esteemed as fertilizers; of choice clays, sands and shell-limestone, for building purposes.

IN THE MIDDLE SECTION

Of fine granites, gneiss, brownstone, sandstone, brick-clays, fire-clays, soapstones, marble, slates, etc., for building materials; epidote in various forms and limestone for fertilizing uses; gold, silver, copper, specular, magnetic, hematite and other ores of iron in abundance; bituminous coal, etc.

IN PIEDMONT VIRGINIA

Granitic building stones, marbles, sandstones, brick and fire-clays; epidotic rocks and limestone, for improving the soil; magnetic, hematite and other ores of iron; barytes, lead, manganese, etc.

IN THE BLUE RIDGE DISTRICT

Various and abundant ores of copper; immense deposits of specular and brown hematite and other iron ores; greenstone rocks, rich in all the elements of fertility; sandstones and freestones; glass sand and manganese; brick and fire-clays.

IN THE VALLEY

Limestones of all kinds, for building and agricultural uses; marbles, slates, freestones and sandstones; brick and fire-clays, kaolin, barytes; hematite, iron ores, lead and zinc in abundance; tin, semi-anthracite coal, travertine marls, etc.

IN THE APPALACHIAN COUNTRY

Limestones, marbles, sand and freestone; slates, calcareous marls, brick-clays, etc.; various deposits of red, brown and other ores of iron, plaster, salt, etc., and a large area of all varieties of bituminous coal.

It is very difficult, within the limits of a publication like this, to present with anything like detail a fair statement of the enormous mineral resources of the State. For all practical purposes, they are boundless in extent, and their distribution is such as to warrant the assertion that before the close of the present century the aggregate product of our mines will surpass in value those of any other State in the Union.

Between the Atlantic coast and the western boundaries of the State, the whole "geological column" is represented, from the foundation granite to the

capstones of the upper carboniferous. And in these successive strata are found the rocks and minerals peculiar to each all over the world, and usually in greater abundance and of greater excellence than anywhere else within the same area.

It would require the space of a large volume to indicate all the localities where these underground treasures are now known to exist, and to describe their specific qualities and estimate their quantities.

In 1891 the Commissioner of Agriculture reported from statistics that—

"In Virginia there have been found, tested and developed, immense deposits of minerals richer than in any other land. The coke from her immense coal fields is higher in fixed carbon and more valuable for smelting than any other, and has been carried hundreds of miles by rail to make cheap iron in other States. Her iron for steel, for cannon, for car-wheels, for stoves, etc., has been given upon test the highest place. Her immense deposits of manganese stand before the world without a rival. Her zinc has long had a reputation based on a large contract with the Italian Government, and both the mines and the smelting are increasing. Her granite was accepted by the Federal Government for building after an official test, and the finest pavements in many cities of our sister States are of her Belgian block. Her large deposits of magnesian lime still furnish the celebrated James River cement.

"Her Buckingham slate stands without a rival in roofing. These all have had official and practical tests.

"Add to these, minerals that have been developed and believed to have shown paying quality and quantity, the pyrite of Louisa, mica of Amelia, fire-clay and ochre of Chesterfield, gold of the middle counties, baryta, soapstone, lead, copper, tin, asbestos, plumbago, kaolin, gypsum, salt, lime, marble, lithographic stone and many others, and Virginia may well be proud of her mineral wealth."

IRON ORES.

More than half the counties of the State contain mines of this invaluable mineral in ample quantities to give employment to thousands of men for ages yet to come.

The varieties in different localities are—

Magnetites (magnetic ore, so called because of its polarity, or mysterious power of attracting the magnetic needle).

Limonites (more commonly called brown hematite), and

Specular, or red hematite ores.

The *magnetites* abound in the Piedmont counties along the southeastern watershed of the Blue Ridge, in the James River Valley, and in the high plateau counties of Floyd, Carroll and Grayson, drained by New River and tributaries. And in Smyth and Washington, and some others of the southwestern counties, a semi-magnetic ore is found of great excellence, but not usually stratified with the encasing rocks as the *magnetites* proper are generally found to be. All these ores are of peculiar value, inasmuch as they are almost, without exception, so low in phosphorous as to be adapted to the manufacture of Bessemer steel, that is so fast superseding iron in all structural work.

The *hematites*, both brown and red, have a much wider distribution. The brown exists in every county between the head of Tidewater and the western boundaries of the State. They are most abundant west of the Blue Ridge, or

rather on the western slopes of that range of mountains, and in the hills, mountains and valleys beyond, all the way from the Potomac to the Tennessee line. The quantity of this class of ore throughout all that region is beyond all computation. And where the railroads from the coal regions cross or penetrate this vast field of ore supply, and bring in the needed fuel for their reduction, large modern furnaces are springing up and give assurance that at an early day Virginia will rank amongst the foremost States in this great industry.

The red hematites and fossil ores are chiefly found in the southwestern counties, beyond the Alleghany, where it merges in the Blue Ridge, a few miles west of Salem, in Roanoke county. The existence of these valuable ores in close proximity to coal and the magnetites of East Tennessee and Western North Carolina, are now attracting the most lively attention of Northern and foreign capitalists, with every indication that, within less than ten years, numerous short railroads will be built, as the necessary foundation for the inauguration of the business of Bessemer steel-making in that section of our State on a scale never before thought of in any part of the South.

Professor McCreathe, in his "Mineral Wealth of Virginia," says of the iron ores of Southwest Virginia:

"This iron-ore region is for the most part embraced in Pulaski, Wythe and Smyth counties, in Southwest Virginia. The ores lie on both sides of New River and Cripple Creek, and the railroad line following these streams renders the whole ore supply practically available for market.

"The limestone ores of the Cripple Creek region show as high a general character as any brown hematite ores mined in the country. The result of numerous analyses shows an average richness in metallic iron of over 54 per cent. in the ore dried at 212° F., with about one-tenth of one per cent. of phosphorus. This unusually fine character is found to be very uniform through all the numerous mines and outcrops examined. It is somewhat extraordinary that not only is there this regularity in the percentage of iron, but also that the phosphorus shows a great uniformity in specimens taken widely apart; and in no case has it been found to exceed two-tenths of one per cent. The quality of the ore is such that it smelts very easily in the furnace, and it should require a minimum amount of both flux and fuel.

"The quantity of iron ore in the Cripple Creek region is undoubtedly very great. The limestone deposits occur in clefts and cavities of the limestone mixed with clay; but in this district, rarely with any flint. The method of occurrence is such that the banks will yield widely varying quantities of ore. Some of them have been worked for many years, and shafts are reported to have been sunk 100 feet in ore-bearing clays with bottom of shaft still in ore. Frequently the ore-bearing material is of unusual richness, yielding in the washer fully one-half clean ore.

"Facilities for economical mining are possessed by this region in a marked degree, for the limestone ores are very free from flint, and are generally found in a loose granular clay which is easily washed out; there is abundance of water for washing purposes, both in the branch streams and in Cripple Creek itself; the ore deposits are geographically and topographically well situated for mining, and the ore-bearing material is frequently of unusual richness. As a result of all these favorable circumstances, the region is to-day producing very cheap limestone ore, and the amount of such cheap limestone ore can be

quickly and largely increased. It is safe to say that the district can compare favorably in the cost of production with any other brown hematite iron ore-producing region."

Among the foothills at the western base of the Blue Ridge, on the Potsdam formation often adjacent to the Valley limestone, is the remarkable deposit of brown hematite, or hydraulic peroxide of iron, that for nearly 300 miles offers its beds of the best quality of ore to the manufacturing world.

The ore is in beds of from ten to one hundred feet thick. The ores often yield sixty per cent. of metallic iron of excellent quality.

Major Hotchkiss, and other distinguished mineralogists, speak of the Eastern system which is more or less developed from Culpeper and Orange county southwest to the North Carolina line:

Major Hotchkiss, as editor of the "Virginias, 1880," page 96, speaking of the formation east of the Blue Ridge, says: "There is no doubt of the fact that well nigh continuous beds of hematite (including its specular, micaceous, red and other varieties), as well as magnetic limonite (including its brown hematite, brown and yellow ochre, bog ore, and other varieties), as well as manganic and other kind of ore found in archean regions, run through all this belt of country, for they are found wherever proper search has been made, from the eastern to the western outcrop of these rocks."

In his geological summary, like Rogers' survey, by State authority, he says, page 37: "The ores of Piedmont are very valuable, its beds of magnetic iron ore are numerous throughout its extent, notably in Nelson, Amherst and Albemarle. The quantity of magnetic ore of the best quality is very large, and now that coal is accessible, these most valuable ores must come into use, especially for mixing with other ores. Recent explorations in Amherst and Nelson counties, along the James River and between it and the Buffalo Ridge, have exposed twenty-five parallel veins of iron ore, ranging in width from five to sixty feet. The ores are specular, magnetic, brown hematite, micaceous, and manganiferous." He gives on same page nine analyses by Professor F. A. Genth, some running as high as sixty-six per cent. metallic iron. On page 38 he gives the analysis of manganiferous ore from same system, giving 66.91 manganese, 18.34 iron. He further says: "A test of the strength of pig iron recently made by the United States, showed that the iron from No. 11 of the above table (Genth's analysis) resisted a pressure of 20,600 pounds to the square inch, while that of the Thomas Iron Company, of Pennsylvania, stood but 18,000, and that of the Cold Spring furnace, of Hudson, New York, 17,000 pounds."

In March, 1880, Professor James P. Kimball, of Pennsylvania, made "a report of a reconnoissance" of the Greenway system of iron ores, and a thorough examination and analyses of the minerals of this property. He says: "Some thirty outcrops of ore have been discovered between the planes of contact of different strata. The number will doubtless be found to be still greater by further explorations towards the summit of Buffalo Ridge, and in all the valleys between ridges. While specular hematite is the prevailing form of iron ore, some of the deposits are in part in the state of magnetic oxide, others again are admixtures of magnetic and specular oxides, while still others, especially those of which limestone forms one of the walls, are compact brown hematite (limonite). All of the ores outcropping in the ridges are capable of being worked with greater facility than is generally the case with ores of the same high class in other regions of the United States. Shaft mining may be

entirely dispensed with, and would only be advisable when seated in the valleys. The James River belt is the most easterly outcropping uplift of the crystalline and metamorphic iron ores of Virginia, and iron like some of the ores of the other iron belts of the Blue Ridge, seems not to be at all contaminated with the presence in any considerable proportion of titanic oxide."

Several ores have been brought to light and partially developed, which are superior Bessemer ores; others very superior qualities of foundry iron.

Everything goes to show that several deposits on each tract are par excellence rich, non-phosphated ores. The present "out-put" is about 150 tons a day of high-grade ores, used exclusively for Bessemer metal. Professor Rogers mentions beds of magnetic oxide in Franklin county and also in Patrick, from three to six feet in width, a fine-grain black ore, yielding from seventy to seventy-two per cent. metallic iron. Iron in abundance, of good quality, is found all over Virginia, and has been smelted from the Chesterfield furnaces of 1620 to the present gigantic furnaces of the Valley and Appalachia.

COAL.

In the immediate vicinity of Richmond, lying on both sides of James River, the longest worked coal field in the United States exists. The coal is bituminous, and has long been esteemed as an excellent domestic fuel, and for foundry and blacksmith work, and the generation of steam. Coal was shipped from this field to Philadelphia before the Pennsylvania mines were worked. The field is from ten to twelve miles wide, and from thirty to forty in length, and in many places the seams are of enormous thickness. As a convenient supply to Richmond and towns and vessels on James River, this coal is an important element of wealth in the State. Over a million tons were taken from this field in twenty years—from 1822 to 1845.

The analysis of these coals by Rogers gave from 55 to 70 per cent. carbon; 22 to 38 volatile matter; with from 2 to 22 per cent. of ash. An analysis in 1873, made in Glasgow, Scotland, gave from 56 to 81 per cent. fixed carbon. In this field, on the north side of James River, there is a seam of natural coke (the coal having been coked by the intrusion of a trap dyke), known as carbonate. This is naturally admirably adapted for blast furnaces, having a high heating power.

The following is from *The Progressive South*, and shows what is being done in the coal fields near Richmond: The Richmond Coal Mining Manufacturing Company, of which Mr. Ware B. Gay is president, has driven many miles of gangways, inclines and other underground works, and its "output" of coal for 1893 is expected to be 150,000 tons or more.

Coal has been said to be discovered in Amelia county, and has been worked with some success in Cumberland county near Farmville, and coal is being developed in Powhatan and Goochland. Little veins of cannel coal have been found in Chesterfield, specimens of which have been brought to the Department of Agriculture. So far the only certain large deposits of this beautiful coal are in the county of Wise. A part of the great coal fields of the Southwest reaching into Kentucky and West Virginia.

In Botetourt, Pulaski, Montgomery and Wythe counties are somewhat extensive deposits of a semi-anthracite coal of local importance and value,

furnishing a good domestic fuel. It is also used in the great zinc-reduction works at Pulaski, and at the salt works in Washington county.

In Rockingham and Augusta counties are some irregular seams of true anthracite, but their extent and commercial value have not been determined. A Pennsylvania company is now working in Rockingham county.

The great Virginia coal field lies in the counties of Tazewell, Russell, Buchanan, Dickenson, Wise, Lee and Scott. In these counties from eight hundred to one thousand square miles are underlaid with numerous seams of as pure and rich bituminous and cannel coal as have been found in the world. The bituminous coals proper cover the whole area mentioned—the splint more than two-thirds of it, and the cannel coal a much smaller and as yet undetermined area. These coals are in the Lower and Middle productive measures. At Poçahontas, in Tazewell, where the mines now yield about one million tons per annum, only the Lower measures are worked, where a coal similar to that on New River, in West Virginia, is found in much larger seams than in West Virginia. In Russell, Buchanan, Dickenson, Wise, Lee and Scott, there are generally four, but in some places six seams of unsurpassed coal for all purposes, including coking coals that make a coke seven per cent. richer in carbon and freer from sulphur and ash than the celebrated Connellsburg coke of Pennsylvania, and four per cent. better than the Alabama coke that is so rapidly building up a vast iron production in that State. Several railroads to and through this immense storage of the best fuel for metallurgical purposes, for gas production, steam and domestic use, are projected, and one is built. The companies are organized, and there is every indication that within the next ten years the development in that section of the State will surpass anything in its history. The best of the iron ores above mentioned are in close proximity to these coals; and the agricultural resources of that part of the State are adequate to the support of an immense industrial population.

Prior to 1883 comparatively little coal was mined in Virginia, the output of 1880 being less than 50,000 tons, but during that year the Flat Top coal regions were opened up mainly by the Southwest Virginia Improvement Company, the Norfolk and Western Railroad having been extended to this section. In 1883 this company mined 99,871 tons of coal, and in 1884, 283,252 tons. There are now several other companies developing coal mines in the same territory, and the prospects are good for a very important coal mining interest growing up in that section. The coal is of excellent quality both for steam purposes and for coke making, and as the Norfolk and Western Railroad Company have built at Norfolk, Va., one of the largest coal piers in the world for shipping this coal, there is no doubt that there will be a large increase in the amount of coal produced at these mines during the next few years. This will naturally result in making Norfolk an important coal shipping port and coaling station for foreign steamships. The distance from these mines to Norfolk is about 378 miles. For coking purposes, this coal, as already stated, has proved very satisfactory. This statement was made in 1886.

It may with safety be predicted that in a few years Virginia will take an important rank as a coal-producing State. And she will moreover have two important coal ports: Norfolk receiving and shipping the steadily increasing quantity of coal brought from the Flat Top coal field by the Norfolk and Western Railroad, and Newport News, already doing a heavy business in West Virginia coal, mined along the line of the Chesapeake and Ohio Railroad.

ZINC.

At Pulaski City, on the Norfolk and Western Railroad, in Southwestern Virginia, are located the largest zinc works in the South, with a supply of ore ascertained to be millions of tons. In numerous other localities in the same section of the State this valuable metal is found, and doubtless will lead to the erection of other works.

In 1884, a vein of zinc ore, fifteen feet thick, was found on the lands of D. S. Forney, and near here are the well-known "Bertha Zinc Mines," from which a supply of ore, yielding 45 per cent., is drawn for the furnace at Martin's, on the Norfolk and Western Railroad, that has a capacity of 1,300 tons of spelter a year.

Since the above was prepared for a former hand-book, the works have been enlarged and improved, and the out-put has been over (12) twelve tons per day. The works had a large contract with the Italian Government, furnishing metal for cannons. Its high quality secured the contract, and gave the Bertha Works their celebrity. A metal made from the ores of this particular formation, analyzed by Dr. Richetts, yielded metallic zinc, 99.9629; iron, 0.0371; lead, none.

In the county of Albemarle, on the eastern slope of what is known as Lead Mine Mountain, there exists a vein of mineral which, during the war, was operated by the Confederates for lead. The shafts which were opened then, and the buildings which sheltered the operatives, have all fallen in, and it is only with some trouble that specimens of the ore can now be secured. Zinc-blende is more abundant than the galena, and the reputation of the deposit has no doubt been injured by calling it a lead mine, for there is but little lead there.

The following analysis was made in 1883:

	Pts. in 100.
Zinc Sulphide	48.22 per cent.
Lead Sulphide	4.65 per cent.
Calcium Fluoride	17.75 per cent.
Iron Sulphide	2.92 per cent.
Insoluble Silicious Matter	25.24 per cent.
Silver (two-thirds ozs. to ton).	
Copper and Arsenic	traces.
	98.78

Zinc has also been discovered in Wythe, Bedford, Floyd, Botetourt and Roanoke. That in Botetourt and Roanoke, on the county line, is used by the Lynchburg "Zinc" Works. That in Wythe is smelted at Austinville.

LEAD.

In Wythe county lead has been extensively mined for over a hundred years. These mines were worked in 1773, and more than twenty millions of tons have been taken from them. The crude ore is found in veins in the limestone, yielding from 5 to 15 per cent. At present the largest lead-works in the South are carried on there, with an apparently exhaustless supply to draw from. In some sections other mines of great value have been found, and means are on foot to develop some of them.

In Nelson county there is an old lead mine that seems to have lacked only capital to make it very valuable. During the war it was worked for the lead, and it was claimed yielded 52 per cent. metallic lead; the tailings, containing

zinc and silver, were thrown aside. Some of these tailings have been found to contain \$40 of silver and zinc to the ton. It is said that lead has been discovered in Clarke, Floyd, Highland, Loudoun, Rockingham, Shenandoah and Smyth. The latter has probably been worked at Austinville.

MANGANESE.

This mineral is found widely disseminated through Virginia in the form of black oxide and as manganeseiferous iron ore. The most productive manganese mine now worked in the United States is that of the Crimora Company, Augusta county, at the base of the Blue Ridge Mountains on the west, near Waynesboro. Other deposits, that are thought to be as large, have recently been brought to light within a few miles of Crimora, between the Shenandoah Valley Railroad and the Blue Ridge.

The first authentic mention of manganese is by Professor Rogers, who reports a manganeseiferous ore which, by the analysis of Professor Smith, yields 68.91 per cent. of binoxide of manganese. Manganese has been discovered in fourteen counties, developed in seven, mined and sold in five. The celebrated Crimora mines, in the Valley near Waynesboro, were for many years worked on a royalty by Andrew Carnegie, to be used in his steel-works in Pennsylvania.

Manganese mines were in operation in 1889 in Page county at Luray, at Markville, and Sands; in Campbell county at Evington; in Botetourt at Houston. Since 1889 manganese works have been put in operation at Savernake, using manganese mines in Rockbridge. A very large deposit of very fine quality has also been developed near the Staunton river, in Campbell county. There appear to be three distinct lines of manganese deposits running across the State from northeast to southwest, and there are probably many breaks or off-shoots from this general formation. The first is east of the Blue Ridge, along the line of the magnetic iron ore, which extends from Culpeper to the North Carolina line; second is along the western base of the Blue Ridge, possibly the entire length of the chain in the State. The third is in the Alleghany chain of mountains, appearing in large quantities and of good quality in Highland, Bath, Craig, Giles, Smyth, Wythe, and other counties, in some of which it has been developed.

TIN.

In Rockbridge county, tin has been found, with indications that the mines are extensive. The quality of the ore has been ascertained by analysis to be excellent, and it is expected from the openings now made, that the quantity will be sufficient to insure adequate capital for the full development of the mines.

Since this authoritative report was made, the following is taken from the Mineral Resources of the United States for 1885:

"The tin field is located in a small area in the eastern part of Rockbridge county, Virginia. The region is very accessible from nearly all directions.

"The Irish Creek area within which tin ore has been found is about three miles wide from northwest to southeast, and about four miles long from northeast to southwest, and therefore embraces some twelve square miles of territory. It is near three lines of railways. To the Shenandoah Valley Railroad the air-line distance is but three miles, and the distance by the valley of Irish Creek, following that stream, is about ten miles. To the Valley Branch of the

Baltimore and Ohio Railroad, the air-line distance is six and a half miles, and to the Richmond and Alleghany Railway, eleven miles.

"The tin ore of this region is found in the form of crystals, threads or strings, and in masses of varying size, disseminated in fissure veins traversing in all directions the granitic and other Archæn rocks that here constitute the crest and the immediate westerly slopes of the Blue Ridge, and that disappear beneath the Potsdam rocks one or two miles to the northwest of the tin-bearing field.

"The tests to prove the existence of these ores were made by sinking, driving or cutting pits, trenches, shafts or tunnels.

"The geological and mineralogical conditions of the Irish Creek tin-bearing region are similar to, if not identical with, those of the Cornwall (England) and other noted tin-producing districts. There are the same crystalline and metamorphic rocks, broken, fissured, and faulted by dikes of trap, basalt and other igneous rocks, thus furnishing similar conditions for the formation of true, profitable, metalliferous fissure veins, such as are caused by profound movements of the earth's crust—just such veins as those in which stanniferous ores of the Irish Creek district are found.

"The exposure of the Irish Creek tin veins, both natural and artificial, unmistakably leads to the conclusion that these veins compare in general character, extent, thickness and richness in metallic tin, most favorably with those of the famous Cornwall district of England, while the mining conditions are better. I may add that no region can offer superior advantages for extensive mining and metallurgical operations; the climate is all the year round salubrious and favorable for work; the Blue Ridge proper of Virginia, unlike most mountain chains, is a very garden of fertility and varied productiveness, and the same may be said of Piedmont Virginia, that flanks it on the east, and of the famous limestone valley that flanks it on the west. The forests of this region can be depended on for charcoal, and it is not far by direct railway to the best metal-working and coking-coals in the United States."

"The assays of the Cash and Painter Mountain ores range in richness from 0.292 to about 70 per cent., making an average for the five given of 23.218 per cent. This is probably too high an average for all the well-picked tin-stone that could be obtained from these localities, and yet it would not, in my opinion, be very difficult to obtain from them a large quantity of ore that would run such an average. The prospecting that has been done, the condition of the veins as exposed, and the richness in metallic tin, I think, warrant the conclusion that an abundance of high-grade ore can readily be obtained from these localities.

"Professor Campbell sampled seventy-two inches of the thickness of this vein, including the wall-rock involved with the ore, and found it to contain sixty-six pounds of metallic tin to the ton. Mr. McCreath analyzed a sample of this ore selected by Mr. Rittenhouse, 'representing all grades, from pure tin crystals to quartz and rock containing little or no tin,' and found in it an average of 31.60 per cent. of metallic tin."

There is no question about its richness. This shaft is on the slope of Painter Mountain, and more than four hundred feet above level of Irish Creek, at the foot of the mountain to the north. The second opening is a shaft forty feet deep, said to contain a vein of tin ore that is thirty-six inches thick at the surface and one hundred and twenty inches thick in the bottom of the shaft where sinking was suspended. Mr. Cabell Whitehead found in an average sam-

ple of the ore of this vein, representing its whole thickness, after repeated assays, an average of five per cent. of metallic tin, or from one hundred and twenty-five to one hundred and thirty pounds of tin to the ton of ore. Professor Campbell made the percentage larger.

Since the Report of Major Hotchkiss was written, a great deal of work has been done at the openings referred to in his report. At No. 1, a tunnel is driven in the hill, with two stopes and open cut on top, showing a large breast of ore in sight, and test-pits are made for 250 to 300 yards up the hill or little mountain, tracing the vein opened at No. 1 from that point to the back line on the east. At the mouth of the tunnel there is a house, 30 by 23 feet, filled with selected ore ten feet deep. At No. 2, seven hundred yards distant, on the southwest line, there is as much more fine ore taken out, and ready for the mill. There is a railroad running from No. 1 to the third story of the mill-house, where the crushing is done.

The improvements are a three-story mill-house, with all the necessary machinery, worth about \$40,000, for crushing, washing and concentrating the ore; included in this is a 300 horse-power engine. Houses for a manager and headquarters for the boarding of miners are on the grounds near the mines at No. 1, about 300 or 400 yards from the mill. This work was done in the last two years by the Boston Company under a lease for two years they had, which expired the 18th of April, 1892; since then the property has been for sale.

COPPER.

In Carroll, Floyd and Grayson counties, large veins of copper ores, sulphurets and carbonates exist, and prior to the war some of them were successfully worked. But their remoteness from railway lines has deterred capitalists from re-establishing these mining operations. There is some prospect that an early day a railroad will penetrate that region, and lead to the re-opening of these valuable mines.

In several of the Piedmont counties copper ores are known to exist, but the mines have never been operated, except in Loudoun and Amherst, where much valuable ore has been raised and shipped to the North, and considerable quantities of native copper ores have been gotten as a by product from the pyrites of the Arminius mines in Louisa county.

Copper has been discovered in at least eighteen counties in Virginia, and in many of them considerably developed. Most of the counties had specimens at the New Orleans Exposition. The ores differ in the different sections. They are carbonates, malachite, bornite, argunite, red oxide, and copper glance, sulphurets, stalactic sulphurets, carrying silver and native copper. The different developed mines assayed from 12½ to 51 per cent. metallic copper. The copper of Virginia runs all along with the gold belt, sometimes mixed with it. The copper ores of Madison, Floyd, and Carroll counties are thus described: Sulphurets of copper are found in very small quantities. The seams of red oxide and native copper appear to be large at some points. They are associated with epidote quartz and greenstone. One vein on Stony Man Mountain, worked many years ago, has an apparent width of 15 feet, ores averaging 6 or 7 per cent. of metal. On the Hawksbill Mountain a seam, which has not been explored, can be traced by outcrop of the ledge for over half a mile. These ores (if native copper can be called an ore) are found in several other localities, and with the Shenandoah Valley Railroad furnishing convenient transportation,

it is hoped that capitalists will soon develop these mineral deposits, one of which Silliman, Shepherd and other noted mineralogists have declared to have great value.

The copper ores, combined with sulphurets, are in large quantity at Toncray and other mines in Floyd, as oxides, carbonates and sulphurets, on what is familiarly known as the southern lode; then northwardly towards Laurel and Brush Creeks, the sulphureted lodes of copper and iron, which become so extensive in Carroll, seem to make some surface exhibits.

In Carroll county, on a line north of the courthouse, these great copper deposits, running northeast and northwest, are fully twenty miles in length, in veins over twenty-six feet thick, dipping southeast and frequently assuming a thickness above sixty feet, and sometimes 150 feet between floor and roof—generally this floor and roof is talco-micaceous slate, interspersed now and then with quartz. This deposit continues on southwest through Grayson, along a line near Old Town and New River, and passes on toward Ducktown.

Close analyses of these sulphureted ores show them to average from 1.70 to 5 per cent. of copper, 40 to 46 per cent. of sulphur, and about 50 per cent. of iron. Their decomposition down to about forty-five feet below the surface has left large quantities of limonite on the surface, by which the veins are easily traced; down in the deposits, just above the undecomposed ores, are considerable bodies of black oxide of copper, copper glance, etc.

The tonnage from these deposits would necessarily be immense, once transportation was assured. Then again, south of Carroll courthouse are handsome exhibits of native copper, as shown at Sutphin's, Early's, etc.; copper pyrites is even built into the foundation of the courthouse in stone taken from the northeast continuation of what is known as the Peachbottom vein, a deposit that extends southwest through Carroll and Grayson into North Carolina.

SALT.

In conjunction with the strata banks of north Holston Valley the celebrated wells of salt exist, that have been used for about a century at Saltville, in Washington county, and during the late civil war supplied nearly the whole Confederacy east of the Mississippi with the indispensable article of salt of the greatest purity. No diminution in supply or quality has ever been detected. The production now is about half a million bushels annually.

The rock at Saltville, possibly 200 feet thick by an unknown length, may have a different origin from that of the gypsum—possibly may be due to deposition in a secure basin, from brines flowing constantly from the salt-bearing groups of rocks known to be in the sub-carboniferous series. The brines are of an unusual degree of purity; have been drawn upon for many years by the salt works of Saltville, making over 500,000 bushels of salt annually, without any appreciable diminution of either strength or quantity.

The brine is drawn from artesian wells about 200 feet deep, rising to within forty feet of the surface. This brine comes from a solid bed of rock salt 200 feet below the level of the Holston, and borings have been made into it 176 feet without passing through it. The supply of brine is not affected by any operations yet carried on, and at one time during the Confederate war 10,000 bushels of salt were made there every day for six months. The present yield is about 360,000 bushels a year, using wood for fuel. When improvements contemplated bring the coal that is but 40 miles off to these works, there will be a very

large amount of salt made here, as it has the advantage of being so far inland.

The copper ores of Floyd county make it possible to here locate successfully alkali works. Professor Leibig mentions the fact that a well has been bored in Tazewell county, and adds: "It must be borne in mind that the salt wells of Eastern Kentucky get their water from the conglomerate at the bottom of the coal measures." Therefore there must be a salt-water bearing formation several hundred feet below the coal bed at the bottom of this lode. Salt has been made at works in the Southeastern part of Lee county, on the waters of Clinch river. There is no doubt an abundance of brine throughout the region in the formation above named. Since the above was written large works for the production of soda ash and bleach have been contracted for. The proximity of coal, salt, lime, manganese and the sulphurets make the success of this great work a certainty.

ASBESTOS.

Asbestos of good quality and workable quantity exists in the counties lying between the upper James and the upper Dan rivers, at several places, notably in Pittsylvania, Henry and Patrick, and latterly found in several other counties, very fine specimens of which can be seen in the Cabinet of the Department of Agriculture. Asbestos in its various formations has been recently developed in Bedford county, and is found in large quantities and of good quality. In the Blue Ridge division asbestos is found in connection with most of the mineral formations. In Roanoke and Botetourt it is very white and pure, though the fibre is short. In Buckingham the fibre is very long and flexible, but the color is not so good, but the specimens were taken near the surface. It is said to have been found in Amelia, Fairfax, Fauquier, Patrick and Pittsylvania.

STEATITE.

Steatite (soapstone) of fine quality for resisting the most intense heat, is found in Amelia, Albemarle and some other counties of Middle and Piedmont Virginia. In Amelia a mine of steatite was successfully operated a few miles from the county seat. One formation of it is very much like serpentine, and resists heat successfully. It is frequently called pot-stone, and was said to have been cut by the Indians into pots. Two veins are found in Campbell county, both crossing the James river from Amherst about ten miles apart. The western one is a beautiful green, cuts easily, and hardens by exposure, and makes handsome building stone. The eastern vein is a very light grey, polishes well, resists heat, and is much used for fire-places. Albemarle has large veins of steatite which are being worked and marketed successfully at North Garden. The veins of steatite run across the State from northeast to southwest. They appear to follow a kind of glade formation, a few miles in width, though other veins are sometimes found outside this line.

PLUMBAGO.

Plumbago (black lead) is found in Amelia, Patrick, Amherst, Campbell, Loudoun, Louisa, Albemarle and other counties. Some deposits are very pure and large in quantity. It appears irregularly in different parts of the State. In some localities it has been tested by analysis, in others manufactured into pencils, and in others as a lubricant.

MICA.

The mica of Amelia has been more largely worked than any in Virginia. It is very abundant, and mines have been profitably worked for some years past. In the vicinity of the county seat are the Rutherford, Jefferson and Pinchback mines. Others exist in the same locality, not yet in operation, to much extent. It is also to some extent developed in Goochland, Henrico, Louisa, Pulaski, Powhatan and Hanover. Near Irwin station, in Goochland, the deposit is being worked, which is of the finest quality, and the largest sheets yet found. A recent report says that large quantities have been taken out and prepared for market. A similar deposit has been found and partially developed in Hanover. Both are very convenient to railroads.

GOLD.

There is a well-defined *belt* of gold-bearing quartz running across the State through the counties of Prince William, Stafford, Spotsylvania, Louisa, Fluvanna, Goochland, Buckingham, Prince Edward, Charlotte and Halifax. In many places on this belt mines have been opened from time to time, and worked with profit and success. With the progress of scientific improvement in the extraction of gold, it may fairly be expected that gold mining in Virginia will become an extensive industry. This precious metal has also been found in Montgomery county. And in the Blue Ridge range of mountains, in Roanoke and Patrick counties, silver ores have recently been found that give promise of valuable results.

The following is from an article prepared by Dr. Pollard, the first Commissioner of Agriculture (in Virginia) for his first report:

The "Great Gold Belt" of Virginia extends from Fairfax county on the north, to Halifax county on the south, a distance of about 200 miles in length by fifteen to twenty-five miles in width, embracing an area of at least 4,000 square miles. A large number of mines have been opened along this belt, particularly in Fauquier, Culpeper, Spotsylvania, Orange, Fluvanna and Buckingham counties. More recently alluvial gold has been discovered in Montgomery and Floyd counties, on the lands bordering on Brush Creek. The proportion of gold there is twenty to seventy-five cents per bushel of earth. The largest particles yet found are worth about fifty cents. Gold is found everywhere for miles up and down Brush Creek and its tributaries. Later information, says *The Montgomery Messenger*, is that several pieces have been found worth \$1.25. The "Gold Belt" of Virginia is composed of a series of granitic, syenitic, stearitic, chloritic, and other rocks peculiar to this section, striking northeast and southwest with the belt, and dipping at high angles, or standing nearly vertical. Stratified with these are numerous veins of gold-bearing quartz, seams of magnetic, specular, hematite, and other ores of iron, trapdykes, etc. The gold found in these materials varies in value from \$1.30 to \$1,000 to the ton. An average 100 tons from the surface downwards is estimated as worth \$932.32. (Report of Richmond Chamber of Commerce.) Assays of samples from the Franklin mine in Fauquier county, made by R. D. Irving, of New York, in 1870, gave for 200 pounds of materials from the veins an average value of \$46.40 of gold and \$1.48 of silver; in another, \$72.55 of gold and \$0.41 of silver; while another gave net \$2.32 of gold. The mean assays of ten samples was \$24.24 to the ton (of 2,000 pounds). Large numbers of mines have been opened along the "belt,"

notably in Fauquier, Culpeper, Spotsylvania, Orange, Fluvanna and Buckingham counties, and from these and gatherings from the surface and soils \$1,662,627 worth of gold had reached the Philadelphia mint up to June 30, 1871. If the same skill and capital were employed here as in California, these mines, in the opinion of practical miners, would yield as well as those of that noted gold-producing State.

Many gold mines have been worked in Virginia from time to time. Want of experience and of proper machinery, want of sufficient depth, speculative investments with no expectation of working them, except enough to get up a company and sell out, with a repetition of this by another company or individuals, have caused failures and suspensions of many of the mines. The late "civil war" caused a suspension of all mining, save iron, coal, saltpetre, and sulphur. Within the past three years the interest has revived, and a considerable number of mines are being worked, particularly in Buckingham, Fluvanna and Goochland. In some localities the yield has proven quite large.

The "Tellurium," located partly in Fluvanna and partly in Goochland, has produced the most gold of any of those enumerated. It was worked for many years by Commodore Stockton, and has produced since its first working about \$1,000,000, though it was never worked below 120 feet, the depth of the free gold, the sulphurets, now known to be most valuable, having been thus lost.

Professor Stowe (from a letter written by him in 1873, just after his return from California and Colorado), regarding his estimate of the value of the Virginia mines, says: "I am now of the decided opinion that the ores of Virginia are the richest and easiest to work of any I have ever met. I have made over two hundred assays of ore from the Atlantic slope, and have visited in person many of the localities where gold is found, and I speak from facts." This is a strong opinion coming from an expert mining engineer.

Describing one of these mines, the "Wykoff," in Fauquier, he says the geological features at the Wykoff present the same general characteristics that prevail elsewhere on the line of the gold belt. The country rock is talcose slate, and the strata are nearly vertical. The decomposition of this rock forms the excellent soil referred to. . . After describing the different veins, one of which is 20 feet thick (the "Mill-House" vein), he says: "I have made careful analyses of samples taken by myself from these veins, with the following results: 'Mill-House' vein yielded \$41.28 per ton; 'Tunnel' vein, the ore of same value; from the Slate vein the clean sulphurets gave \$89.18 per ton; in another vein, known only by its outcrop, the clean sulphurets yielded \$623.10 per ton; another vein, which contains copper pyrites, yielded of pure gold \$30 per ton."

Major Hotchkiss writes of this belt, including Buckingham: "Here is a mass of precious metal (enclosed in the rock) which cannot be exhausted for ages, and in this respect the region in question is the most important of all known deposits, California not excepted. The celebrated Overman (practical mineralogist) says: "We have here in Virginia a belt of gold of unparalleled extent immense width, undoubtedly reaching to the primitive rock." In the earlier days very large nuggets were found by breaking up the quartz rocks with sledge-hammers. One of these, in Spotsylvania, sold for \$438. It was not unusual for farmers, after they laid by their crops, to direct the overseer to take "the hands" and mine or wash for gold; and there were times when thousands of dollars were made *per annum* this way. Stafford, Spotsylvania, Orange, Flu-

vanna, Goochland and Buckingham were regarded gold fields. In several work is now going on.

SULPHURET OF IRON (PYRITES).

Immense mines of pyrites are worked in Louisa county and the products shipped north for the use of sulphuric acid manufactories. So important has this industry become that branch railroads have been run to the mines from the main line of the Chesapeake and Ohio railroad. Other large deposits exist in the mountain regions bordering on North Carolina, but needing a railroad for their development. New veins of this, the "fool's gold" of the Colonies, are being discovered and developed and opened in different parts of the State. Some are valuable, for the gold and other metals found in these sulphurets, and this by-product taken in connection with the large quantity of sulphur found in all, and the increasing demand for sulphuric acid, is likely to turn this into a true gold so far as sure profit is concerned. Two fully developed and profitably worked mines are near Toler'sville (Mineral City) in Louisa county. One, the Armenius mine, has been sunk over four hundred feet, and the Crenshaw, the other mine, though not so deep, is fully worked. The by-product secured is native copper ore. Sulphuric acid is made in the city of Richmond in two chemical works for use in the manufacture of fertilizers. Large quantities are shipped north from the Armenius mines. Valuable veins of pyrite, bearing gold in fairly paying quantities, and probably other metals, have been found at other points in Louisa county and in Spotsylvania, Fluvanna, Goochland, Buckingham and some other counties.

BARYTES.

The barytes of commerce (sulphate of barium) is found in many counties. It has been mined in Campbell and Bedford and is ground in Lynchburg and shipped north. It is also found in the southwest, abundantly in Smyth county.

LIME AND CEMENT.

Metamorphic limestones exist in the valley of James River, between Richmond and Lynchburg. Silurian limestone extends from the Potomac to Tennessee, in great variety. Since the discovery that building lime with a large percentage of the carbonate of magnesia, is a poor material to use in the mortar of large buildings and other permanent works of masonry and brick, peculiar value attaches to beds of pure carbonate of lime. Such beds fortunately exist at convenient localities in the great Shenandoah Valley, and lime-burning is already carried on there at two points—Riverton, in Warren county, and Eagle Rock, in Botetourt—where an article is produced entirely free from magnesia, and is in great demand for city work, where the sulphurous fumes of coal combustion are so destructive to magnesian-lime mortar. As this pure limestone exists in many places, the industry is a rapidly-growing and a profitable one.

Most excellent hydraulic cement has been produced for many years and in large quantity at Balcony Falls, in Rockbridge county. The stone is also found in Bedford, near Buford's Gap, but has not been utilized until recently.

All the various limestones from the most common building-rock to the finest marble are found in Virginia. Her dolomite limestone has been found

so superior for fluxing certain iron ores that it has been carried considerable distances by rail in preference to using common limestone on the ground. Virginia may be said to be an agricultural lime State.

The whole Valley has the best limestone for burning. The whole of Tidewater has shell (carbonate) marl. A good vein of limestone runs across Upper Middle and Lower Piedmont. Several of the carbonate marls, mixed with clay, will, by being calcined, make cement like the Portland that is made in England. The travertine marl of the Valley, and the highly aluminous clays of that section, should make such cements very cheaply.

PLASTER (GYPSUM).

On the waters of the North Fork of Holston River, in the counties of Smyth and Washington, there are many miles in length of an immense ledge of gypsum, as pure as that brought from Nova Scotia. It has been penetrated to the depth of nearly 800 feet and no bottom found. We have here a quantity of this valuable fertilizer that is practically exhaustless for centuries to come.

This massive deposit of gypsum, more than 600 feet thick, at Stuart and Buchanan's Cove, in Smyth county, shows conspicuously; also, at the Pearson Beds and at Saltville, in Smyth county, and at Buena Vista, in Washington county. Many explorations and long continued examinations led to the belief, at last, that these vast gypsum deposits, showing for about 20 miles in length, really compose two or more regular strata of the sub-carboniferous rocks, and have a width, exposed and concealed, of one mile or more from the fault northward. It has been mined to the depth of about 180 feet at Saltville and Buena Vista, and its general composition by analysis is as follows: Lime, 32.50; sulphuric acid, 48.50, and water, 20.50, showing traces of magnesia, alumina and iron.

Plaster for clover, grass and tobacco is universally used by the farmers of the Valley, Piedmont and Upper Middle Virginia, sowed directly on the land—preferring ground plaster to calcined. Grinding plaster gives a number of mills to the State. Even the Nova Scotia that comes to the Eastern section is ground in the State. Smyth and Washington counties could furnish plaster for the country if they had deep-water transportation.

MARL.

In many of the Tidewater counties enormous beds of blue, and green-sand-marl and shells are found but a few feet below the surface, supplying a fertilizing material at a nominal cost that is rapidly converting all that region into the garden spot of the continent for supplying the great cities of the Atlantic coast with table vegetables of the highest excellence, and is giving much importance to the peanut culture. A full description of the geological formation of this alluvial region would not be interesting to the unscientific reader, but it may be well to call attention to the difference between the marls of the more recent formations, the *pliocene* and *miocene*, which derive their value mainly from the carbonate of lime which they contain, and the green sands and olive earths which are found in the *eocene* in conjunction with the shell or calcareous marl. (Green sand is sometimes found mixed with the marl of the *miocene* region.)

The region of *eocene* marls extends from the falls of the rivers eastward fifteen to twenty miles. Miocene marl is often found overlying the eocene, and is easily recognized by the difference in the shells which it contains—scallops and others not found in the eocene. Beneath this (Professor Rogers, quoted by Dr. Pollard, says), and usually separated from it by a thin line of "black pebbles," like those occurring on the Pamunkey, there occurs a stratum of greenish, red and yellow aspect, containing much green sand and gypsum, the latter partly disseminated in small grains, and partly grouped in large crystals. The under stratum, rich in green sand and containing a few shells in friable condition, extends to some depth below the level of the river. At "Evergreen" the whole thickness of the deposit appears to be about twenty feet.

This was said of the James River formation, but will apply as a general description to the deposits of the Pamunkey, Mattaponi, Rappahannock and Potomac, as Professor Rogers says "eocene marl is there found very similar to that on the James. On the Mattaponi the occurrence of green sand strata has been ascertained in some places, while in others the beds containing the substance have been replaced by beds of clay, which are less likely to prove valuable agriculturally. The olive earth overlying some of these beds, particularly on the Pamunkey, seems to have lost some of the carbonate of lime which it once contained, and has but a small portion of gypsum."

Phosphoric acid is in all the green sand marls, and is in combination with lime or iron, forming phosphate of lime or phosphate of iron. It is not a part of the marl grains, but is mixed through the mass of them, in fine powder or in small, light-green and very soft grains. It is insoluble in water, but in good form to dissolve in the soil. It is in very variable quantities in the marls from different beds, and in marls from different depths in the same bed there are considerable differences in the percentages of this substance. Some of the best marls which are sold contain 3 to 4 per cent. of phosphoric acid, while there are others sold which do not contain more than a half of 1 per cent. of this acid. Potash is a constituent of the grains of green sand marl, and makes from 5 to 7 per cent. of its weight. It is in combination with silica and silicates of iron, alumina and magnesia. It is quite insoluble in water, and though it may be soluble in some other substances, it is not more likely to be dissolved than the other mineral substances in the soil, for example, than felspar or glass. We have no evidence that it is of any effect in growing crops, and we cannot assign any price to it. It should be of value in composts, and there is some reason to believe that the action of quicklime or of fermenting manures will liberate and make soluble some of the potash. Carbonate of lime, in fine powder, is found in some of the green sand marls, but not in all of them. Samples have been analyzed which contain 20 per cent. of this substance, while many others are found which do not contain any. Small quantities of sulphate of lime and sulphate of iron may also be found in some of the marl.

The above is from the Hand-Books of 1885 and 1886.

The agricultural report for 1888, speaking of Tidewater Virginia, says: Not only has this section been blessed with lime beds, brought up all its streams from the ocean, placing this valuable deposit of miocene marl at its doors, but the Rappahannock, the North and South Annas, the James and Appomattox, rising in the felspar and hornblende ridges and valleys of Piedmont, and the black rock of Buckingham and Appomattox crossing through the pyrites and sulphur ledge, brought down the potash and mingled it with these sulphates,

carrying them to meet the tide, bringing the shells and fossil bones from the ocean. These, and the dead marine animals and their coprolites, formed the eocene marl beds, where the sulphates and shells made sulphate of lime (plaster—the great Ruffin's "gypseous earth"), and the potash and fossils gave the green sand its agricultural value. Here, then, in addition to their agricultural lime, is a direct fertilizer placed at their doors. Mr. Edmund Ruffin roused these people to the wealth at their doors, when many were fleeing from their worn-out lands. Professor Rogers disclosed to them an agricultural fertilizer with the productive qualities of the beds of Peru and the permanent enriching qualities of pure bone. Immense crops and permanent improvement was the result of following Mr. Ruffin's advice, and improving on the suggestions he had forged out without the aid of such an advance as chemistry has now made in all that pertains to agriculture. The war put an end to most agricultural operations on a large scale, at least in the staple crops of corn, wheat, oats and tobacco; but the lands on the Pamunkey and James that were heavily marled with the Pamunkey and James River green sand are fertile and productive to-day, although for more than twenty-five years they have had neither manure or fertilizer. These marls have been tested by chemical analysis and agricultural experience, and the value of Virginia shell marl as an agricultural lime, and the green sand marl as an active fertilizer, put beyond the possibility of a doubt.

There is considerable interest manifested this year in the marl deposit of the State. The value of green sand as a basis for high-grade commercial fertilizers, and of the carbonate marls and adjacent clays for cements, has caused extensive investigation. There are works on James River and the Pamunkey preparing green sand marl for sale now in operation with good profit.

BUILDING STONE AND SLATE.

Virginia stands first among the States in the variety and beauty of her building stones, beginning with her granites and slates in Eastern Virginia, and extending to her limestones in the west, her brownstones in the eastern counties, her marbles in Bedford, Russell and Scott counties, and ending with the beautiful sandstones of the southwestern coal field, in half dozen counties.

Virginia can make an exhibit in this line of which any country might be proud. At Petersburg are beautiful light and dark granites in inexhaustible quarries. At Richmond and Manchester, on opposite sides of James river at the head of tide, are the great quarries that stood the test of stone made by the government for the Naval Department at Washington. At Fredericksburg is fine granite, and near there the beautiful white sandstone of which the "White House" was built. The brown sandstone of Prince William, Botetourt, Nelson, Craig and Albemarle will compare favorably with the best anywhere.

The following quotations show the opinion of the Richmond press, as expressed, of the Richmond granite in 1893: "We are right in the midst of the James river granite quarries. They are running all the time; as the worth of this beautiful stone is getting to be better known year by year, more of it is being quarried and *new* openings made. This stone is almost inexhaustible along the James river, near Richmond, and on the lines of two great railroads, the Richmond and Danville and the Chesapeake and Ohio railroad (James River Division) the granite quarries are very busy with orders ahead for many months."

Roofing slate of excellent quality is found on both sides of James river. That found in Buckingham, near New Canton, on Slate river, yields slate that compares favorably with the best qualities of imported material, both in density, texture and capacity for resisting atmospheric changes. The capitol and University buildings have been covered with this slate, and the quarries have been extensively worked. The rock splits with great regularity and may be separated with iron wedges into sheets of 100 square feet, not more than one inch thick.

In Nelson county, on Rockfish and near the mouth of Tye river, a true marble is found of beautiful quality, whiteness and texture, which renders it susceptible of taking the highest polish. This marble is easily worked with the chisel. In Campbell, a few miles from Lynchburg, a good marble is found. Limestone is also abundant. Amherst and Albemarle have slate quarries which have been worked furnishing good roofing and admirable furniture slate. Loudoun has the finest white marble, and Botetourt the finest black marble yet discovered in the State. Lithographic stone has been found and tested in the James river valley, in the counties of Botetourt, Rockbridge and Alleghany, and a species of steatite of beautiful green stone suitable for building has been found in several counties. Virginia abounds in most valuable building stones.

KAOLIN.

Kaolin has been discovered in Amelia, Fauquier, Fluvanna, Powhatan, Louisa, Chesterfield, Amherst, Nelson and other counties. It has been developed and anayzled in several of the counties, but is not worked to any extent or mined. By both analyses and working tests Virginia kaolin has been found to be of high quaility.

FIRE-CLAYS.

Fire-clay has been found developed and is being worked in Chesterfield at Robious; at Dorset, in Powhatan; at Buena Vista, in Rockbridge, and very fine bricks were on exhibition at the Virginia State fair last fall. Vitrified brick is made at Chilhowie, in Smyth county, and clay has been found and developed in Louisa county. There are fine tile and brick works at Chester; terra-cotta and porcelain works at Strasburg, in the Valley, and Virginia has in large quantity the finest clays of every variety. Clays and marl are found in close proximity, and in some places intermixed, which, calcined, make a fine cement, like the Portland and Roman.

MINERAL SPRINGS.

There are numerous mineral springs in Virginia, varying, as they do, in many particulars; they are all valuable, and Virginia has a right to be proud of what she can show in this line. Many of these springs are popular resorts for pleasure seekers from all parts of the country. Professor Rodgers says in his geological report: "The thermal waters appear to be indebted for their impregnation to rocks of a calcarious nature, while the sulphuretted springs derive their ingredients mostly from the pyritous slate, and that the Warm and Hot Springs discharge a considerable amount of free gas consisting of carbonic acid and nitrogen."

Viewed singly in relation to number, variety and high reputation of its mineral waters, this region is well entitled to be proud of the resources of which it is possessed. Grouped, as these springs are, at a moderate distance apart, presenting, within the same district, a variety of medicinal character for which, in other countries, regions remote from each other, require to be visited in succession, placed at a point equally accessible to the inhabitant of the seaboard and the great valley of the west; and situated in a region of grateful summer temperature, of a salubrious climate, and of picturesque and diversified natural beauties, they are now rapidly attaining a celebrity, powerful and varied of remedial qualities, as well as refined social enjoyments which are annually gathered around them, destined ere long to eclipse the older reputation of the famed fountains of the Northern States, and to vie with the long established "character of the most noted watering places of the world."

Augusta county has several excellent mineral springs, each very good after its kind. Among these is the *Stribling, the Variety, Crawford, the Lone Fountain* and the *Chalybeate Lithia*. Varying in quality of waters, they are all much esteemed and are well patronized by the public.

Rockbridge has the world-renowned *Alum Springs*, known as the *Rockbridge Alum*. They are chalybeate, but contain a number of valuable constituents. Chemists consider this water valuable and remarkable. They have a wide reputation for the cure of skin diseases and scrofulous complaints. They are eleven hours' travel from Richmond, and twelve from Washington city. The *Cold Sulphur* is also in this county, and Wilson's *White Sulphur*.

Also in Rockbridge county are the *Jordan Alum Springs*. This place is well improved. There are six springs. No. 1 was analyzed by Professor Mallet of the University of Virginia, and found to contain carbonate instead of sulphate of iron—the form in which it generally appears in alum springs. The one analyzed by Professor Aiken, of Baltimore, contains iodine. The *Rockbridge Baths* are an important part of the mineral springs of the county.

In Montgomery county are several springs. The Montgomery *White Sulphur* claims to contain constituents like the Greenbrier *White Sulphur*, and are a most popular resort. The *Alleghany Springs* is among the celebrated popular resorts, and is in the midst of a fertile and beautiful portion of the State. The *Alleghany* has considerable fame in the cure of *dyspepsia*. The *Yellow Sulphur*, with considerable reputation, is also in this county.

The *Buffalo Lithia* of Mecklenburg have attained an excellent reputation in the cure of diseases of the kidneys, liver, etc. They are on the Atlantic and Danville railroad, and in a very healthy country. Dr. Houston, formerly of Richmond, in an article in the medical journal writes, "As a medicinal agent, the waters are equal if not superior to any mineral water of which I have any knowledge."

There are numbers of other springs, some well known. The *Halifax Wolf-Trap Lithia*, *Powhatan Huguenot Sulphur Springs*, *Fry's Springs* in Albemarle, *Warrenton White*, *Roanoke Red Sulphur*, *Botetourt Springs*, the *Yellow Sulphur*, *Coyners*, in Botetourt, with two bold springs, one white the other yellow sulphur. The *Bedford Alum* at New London, in Bedford county, is a well-known popular resort for people of the surrounding country.

There are a number of mineral springs in Giles county which are places of resort during the heated term, the most noted being the *New River White Sulphur* and *Hunter's Alum*.

Bland county has several springs—*Sharon Springs*, seven miles west of Bland Courthouse—recommended by physicians for scrofulous diseases. *Kimberling Springs*, seven miles north of Bland Courthouse, is right in the bosom of the mountains, and a delightful resting place during summer.

Scott county has the *Holston Springs*; Smyth county the *Chilhowie*.

Washington county has the famous seven springs and the *Mangel Springs*, and at *Glade Spring* are the *Washington Springs*.

The mineral springs known as the *Farmville Lithia Springs* are in Cumberland county. This water has a wide reputation, and is sold all over the country.

The *Orkney Springs*, in Shenandoah county, have an established reputation as a ferruginous tonic. Two of the springs, when analyzed by Professor Mallet, of the University of Virginia, were found to contain carbonate of iron, and another (Bear Wallow) sulphate of iron, the form in which it exists in most alum springs. These springs are endorsed by high medical authority.

The *Shenandoah Alum* is in this county; also, the *Orange Springs*, once a place of considerable resort.

The *Rockingham Mineral Springs*, an admixture of sulphur and chalybeate waters, thirteen miles from *Harrisonburg*, are highly spoken of.

The *Rawley Springs* is eleven miles from *Harrisonburg*, in *Rockingham*, have a considerable reputation. Both these springs are surrounded by beautiful scenery, and are in the midst of a fine country.

The *Hot Springs*, the *Alum*, the *All-Healing Springs*, of Bath county, have a great reputation for the excellence of their mineral waters. The baths of the *Hot Springs* range in temperature from 110°, as it issues from the earth, to 100°, 98°, 86°, 78°, and are fitted with every comfort where patients can use the sweating and packing process if they desire to do so. Besides this, here are found *sulphur*, *magnesia*, and *chalybeate* waters of the best. The *Warm Springs* have long had a reputation for the cure of *rheumatism*, *gout*, *nervous diseases*, *chronic diseases* of the *bowels*, *torpid liver* and *dyspepsia*. The company of

guests here is generally large and refined. The Healing Springs has a specialty of curing eruptive diseases, *sore eyes*, and ulcerations generally. They claim to be sedative, diuretic and alterative. The *Millboro* and *Wallah-Watoola* are considerably patronized, and have many advantages.

In Frederick county, the *Rock Enon Springs* are on the west of North Mountain, and have a wide reputation for curing diseases. The *Jordan White Sulphur* is much like the celebrated "*Greenbrier White*," and is used for the same class of diseases.

Botetourt has several mineral springs, all of good repute and well patronized during the summer months. The Blue Ridge Springs on the Norfolk and Western railroad, Dagger's Springs, and Coyners'. Coyners' has several springs, one of beautiful white sulphur; another of blue sulphur. The Blue Ridge is especially patronized by the gay and fashionable public.

Russell county has many mineral springs; Sussex one—the Copper Honk—and Amelia several, the principal of which is the *Otterburn Lithia and Sulphur Springs*.

The Buffalo Ridge is in Nelson county; is a strong chalybeate water, much valued as a tonic and well patronized. Its reputation extends back perhaps one hundred years.

The Buffalo Springs of Amherst is not now open to the public. Thirty years ago it was the popular resort for all that section of country. A fire destroyed the hotel, since which time it has not been used, except by families in the neighborhood. The spring is a bold white sulphur, rising out of the solid rock, six feet deep. The spring is all that remains. The regular summer patronage has drifted in other directions.

NATURAL CURIOSITIES.

Few States have more wonderful and interesting natural curiosities than Virginia. Its cayes and waterfalls alone will repay the tourist for an extended trip in the delightful climate in the summer months. Virginia has the only wonderful and useful Natural Bridge and Tunnel in the world—perfect in usefulness, grand and sublime in proportions, and magnificent in structure and finish. Space can only be given in this chapter for the most noted, but each county will have some notice of lesser wonders in its boundaries.

LAKE DRUMMOND.

Of all the curious phenomena with which this land of marvels abounds, this far-famed lake may certainly be ranked among the most wonderful. It lies wholly within the limits of the great Dismal Swamp, of which it also occupies the highest elevation, being twenty-two feet above mean tidewater, into which it flows on all sides through natural or artificial channels. It is distant from Portsmouth about eighteen miles in a straight line, and about twenty-five miles by the Southern branch of the Elizabeth River and the Dismal Swamp Canal. From the canal it is approached by a "feeder," four miles in length, literally tunneled through the dense foliage of juniper, cypress, gum, and other heavy timber, and the still denser thickets of reeds and undergrowth, which cover the quivering surface of the Swamp. As the visitor emerges from the deep shadows of this silent pathway and glides out upon the broad bosom of the shoreless lake, he is at once impressed with the mysterious stillness and vast expanse of his surroundings, a voiceless, eternal solitude! Fish are plentiful in the lake, but not a bird or beast is to be found in its neighborhood; though the outer margin of the Swamp is said to abound in deer, bears, wild turkeys, and other objects of the hunter's delight.

The water is clear and bright, amber-colored; is pleasant to the taste, and keeps pure for years. The United States vessels leaving the Portsmouth navy-yard for long voyages secure a supply of this "juniper" water.

The lake, says tradition, was first named Drummond's Pond, after the discoverer; who, wandering through the Swamp in search of game, came upon this sheet of water, and, by following its margin, managed to find his way into the open country, while his two comrades, less fortunate than he, were lost and never again heard of.

From "time immemorial" this secluded and romantic pool has excited the interest and curiosity of Nature's students, and numbers of excursionists, prompted by one or other of these motives, annually invade its privacy and endeavor to penetrate the mystery of its existence.

The lake is nearly round, and about twenty miles in circumference. There are, of course, many theories as to its origin, the most plausible of which, per-

haps, is that, during some extensive fire in the Swamp, the crust covering this body of water, then a subterranean pool, suddenly gave way and sank to the bottom. This theory is sustained by the fact that out in the middle of the huge basin charred trees can be seen in many places still standing, as they probably stood in the pre-historic ages, grim guardians of Lake Drummond's secret.

THE NATURAL BRIDGE.

For two centuries Niagara Falls and the Natural Bridge passed unchallenged as the great natural curiosities of the United States. Rockbridge county was named from this bridge, its most striking feature—one of the wonders of the world. It is two hundred and fifteen feet to the arch, and two hundred and sixty three feet to the road-bed crossing it; the arch is sixty feet wide.

The first impression upon the mind of the visitor is a lasting one—*its majesty*. It stands alone. There are no more like it. *It is a bridge*, a colossal arch from mountain-top to mountain-top in perfect proportion and enduring strength.

Whatever questions may arise as to its origin, there is nothing hidden or mysterious in its appearance. The material of the walls is the material of the bridge. Its piers are braced against the mountains; its enormous keystone bears down with a weight which holds all the rest immovable, yet which does not look ponderous. Every part is exposed to our view at a glance, and all parts are so proportionate to one another and to their surroundings—so simple and comparable to the human structures with which we are familiar, that the effect upon our minds is not to stun, but to satisfy completely our sense of the beauty of curve and upright grace and strength drawn upon a magnificent scale. "It is so massive," exclaims Mr. Charles Dudley Warner, "so high, so shapely, the abutments rise so solidly and spring into the noble arch with such grace and power! . . . Through the arch is the blue sky; over the top is the blue sky; great trees try in vain to reach up to it, bushes and vines drape and soften its outlines, but do not conceal its rugged massiveness. It is still in the ravine, save for the gentle flow of the stream, and the bridge seems as much an emblem of silence and eternity as the Pyramids."

Descending further the path cut along the base of the cliffs, which, as one writer has said, arise "with the decision of the wall, but without its uniformity—massive, broken, beautiful, and supplying a most admirable foreground." We advance under the arch, and gaze straight up at its under-side, which is from sixty to ninety feet wide, and is almost two hundred feet above the stony bed at Cedar Creek.

Historical.

The earliest mention of the bridge is by Burnaby, in 1759, who speaks of it as a "natural arch or bridge joining two high mountains with a considerable river underneath."

A bloody Indian fight occurred near here about 1770. Arrowheads, fragments of pottery, pipes, etc., are frequently found in the fields and roads of the neighborhood.

Lightning struck the bridge in 1779, and hurled down an immense mass of rock.

Washington, when a surveyor for Lord Fairfax, visited it, and carved his name where it may now be seen.

During the Revolution the French organized two expeditions to visit it. From their measurements and diagrams a picture was made in Paris, which for nearly half a century was copied in Europe and America as correct.

The place was much visited in the early part of this century. Marshall, Monroe, Clay, Benton, Jackson, Van Buren, Sam Houston, and others were registered here.

The original bridge tract was granted by the King to Thomas Jefferson, in 1774. After he was President he visited the place, and surveyed and made the map with his own hands.

The next year he returned, bringing two slaves, Patrick Henry and wife. For them he built a log cabin with two rooms, and directed one to be kept open for the entertainment of strangers. The slaves were never manumitted and never recalled, the survivor dying where her master placed her twenty years before. Jefferson left here a large book "for sentiments." This was written full, and with its priceless record was accidentally destroyed in 1845. Only a few extracts can be found. Jefferson spoke of it as yet to be "a famous place, that will draw the attention of the world." Marshall wrote of "God's greatest miracle in stone." Clay, of "the bridge not made with hands, that spans a river, carries a highway, and makes two mountains one."

Henry Piper, a student, in 1818, attempted to carve his name the highest, and found that he could not return. He then undertook the incredible feat of climbing to the top, and accomplished it.

Corbin Lackland fell from Pulpit Rock in 1833, and Robert Walker in 1845. Both were killed.

A stranger leaped from the bridge in 1843, and his body was never identified.

John Rice fell from a crag, but was saved by the branches of a tree, in 1865.

Miss Randolph's celebrated adventure occurred on a large cedar stump, since demolished by relic hunters, which stood near the centre of the arch on the upper side.

The first hotel was built by Major Douthat, a Revolutionary soldier, in 1815 at a place about two miles north of the bridge. An opposition hotel was built near the former in 1820. In 1828, Captain Lackland, also a Revolutionary soldier, built the first hotel on the location of the dwelling-house of the present owner, calling it Jefferson Cottage. The Natural Bridge Hotel was built two years later.

At present the hotels consist of four principal buildings, Forest Inn, Apple-dore, Pavilion, and Bachelors' Lodge. These are supplied with running water and connected by bridges, and are in every respect elegantly furnished.

WEYER'S CAVE.

Weyer's Cave is situated in the northwestern part of Augusta county, seventeen miles from Staunton. It was discovered by Bernard Weyer while hunting opossums.

The entrance, since enlarged, was so small as scarcely to admit a man on hands and knees. It is by touch and sight alone that any idea can be conveyed to the mind of this wonderful work of nature. Pen cannot paint it, words cannot tell of the wonders long hidden that have been opened to the world. Foreign travelers speak of it as they speak of Niagara and the Natural Bridge, because of its pre-eminence among natural objects of its class.

Its dimensions, by direct course, are sixteen hundred feet; by winding path, much longer. The first apartment is what is called the Ghost Chamber, because of a solitary white figure that stands at the end of its long silent gallery. The Hall of Statuary comes next, above the ceiling of which is a dome hung with sparkling stalactites. This dome seems draped and columned as by a skilled artist. On one side of this hall is an altar with curtains and candlesticks, and on the other, fancy brings out a Cathedral Organ, with rows of pipes and pendant cornices. Down a rude flight of steps we come to the Cataract, a petrified waterfall, one of the finest sights in the cave. The sullen stillness of this hushed Niagara is most impressive. Farther on is the Senate Chamber, with Speaker's chair and desks for members, and, above all, an unmistakable gallery with fancyful balustrade, over which seem to peer the faces of the visitors. Next is the Cathedral, from the centre of which hangs its great chandelier; the Bottomless Pit, which gives back no sound to the listening ear when anything falls into it; Cleopatra's Needle, Antony's Pillar, and numberless other strange forms which have so copied the outside world and man's workmanship, that we stand amazed before what we see.

Washington Hall is ninety feet in height and two hundred and fifty feet long with great galleries and fancyful projections, the general effect of which is indescribable.

The fine perspective, the lofty roof, the feeling of being away from the world, produces sensations not to be forgotten.

There is a beautiful pond out of the usual course, which will repay the visitor. Weyer's Cave has been well called the Antiparos of Virginia.

THE TOWERS.

There is not a more interesting natural curiosity in the Old Dominion than the "Cyclopean Towers," or "Chimneys," as they are sometimes called, of Augusta county. These towers are situated at the foot of a ridge and in what may be the old bed of the Shenandoah river. They are five towers or piles of rock, ranging from fifteen to thirty feet in diameter, and perhaps seventy-five feet in height. They are isolated, rise suddenly, appearing to have no connection with anything around them. One has an opening like a fire-place which would hold a cord of wood. But there is no flue, hence the name towers seems most appropriate. The outer surface seems to be cracked, the cracks being irregular but smooth like a "crazy quilt." This was perhaps the effect of freezing and thawing suddenly. A few dwarf cedars show the sparsity of soil on its top and sides. No soil is visible. The wonder is how they have grown there. But the fact remains they are there, growing out of the rock, clinging to its barren sides. They have defied the storms and the cold and heat of many years. To the lover of the mysterious, the wierd, the uncanny, these towers by moonlight would give a most satisfying experience.

THE NATURAL TUNNEL.

Nearly a century ago there was discovered a "Natural bridge" in Scott county. It was called a "Natural bridge" because, like *the* "Natural bridge," a public road passed over the chasm on the ridge under which this tunnel existed, and through which rushed the waters of Stock creek, a branch of the Clinch. For perhaps a century this great curiosity remained in seclusion, furnishing a pas-

sage for the occasional teams or herds of cattle passing that way to market. In the last few years the South Atlantic and Ohio Railroad was seeking a passage from Bristol to the rich mines of Big Stone Gap, and reaching this point, determined to use the tunnel, as they could not use the bridge. Cutting a short tunnel to get into the great natural curiosity, the railroad laid its track through this great cave and emerged through a way "not made with hands" into the valley beyond the mountain. It is thus described in the *Bristol News*:

The tunnel is divided in two. The first, which is very short, was cut by man. Leaving this we enter a recess the shape of a three-fourths circle (with a diameter of two hundred feet), whose walls of one solid rock stand almost perpendicular four hundred feet into the heavens. On this rock may be seen bunches of ferns, here and there a bunch of flowers, which cling to the little soil that has lodged in the crevices through the ages. At the top we see the beautiful sky, which is made more beautiful by the green border of trees that circle on every side. Standing in the center of this amphitheater we look with wondering eyes upon that stately wall, which is grand in its sublimity. Passing to the top of the mountain we look into the depths of this circle and see the grandest sight of all. There a beautiful stream of crystal water, emerging from beneath the mountain, rushes almost parallel with the railroad, then with a turn goes beneath it and is lost to sight through the open side of the circle, which is cut from top to bottom (with sloping sides) as though made especially for the stream to pass through. On the railroad, which makes a diameter of this semi-circular amphitheater, may be seen the engine (though comparatively small in the distance) suddenly come to view from under the mountain, and disappears as suddenly in the opposite tunnel. The road, the clear stream plunging from stone to stone; the large rocks, which are clothed here and there with the green vegetation; the open segment of the circle, with its border of green trees, as though a drawn curtain thrown open to the eye to make more beautiful that lovely landscape of lofty mountains, with their crested green; the cragged rocks, and the glistening water in the distance, all unite in completing a picture without a parallel, if not an equal.

We pass down from this lofty place and once more enter the rotunda the same way we entered it before. Proceeding, we are struck with awe as we look upon the mouth of the Natural tunnel, which is over nine hundred feet long, and is not the shape of a common tunnel, but larger in every way, and looks similar to the opening of an immense cave. The walls do not open directly into the mountain, but they open with a slant, throwing their face outward, making it one of the grandest sights I have ever seen. The tunnel is not uniform either in height or in width. In some places it is very wide and in some it is very high. Again, in places it is just wide enough for the railroad and a stream of water to pass through. On the walls may be seen fantastic and beautiful figures, which are made smooth by the constant dripping of water through the centuries that have passed. The railroad, as it passes through, does not lie at the bottom of the tunnel, as one would suppose, but it is raised (with a filling) on an average from nine to fifteen feet. From this we can get a splendid view of the whole surroundings. To our sight (as we pass through) we see two pillars of stone (about four feet apart) which seem to come out of the ground. After rising about six feet they join together in one solid rock and proceed to the top of the tunnel, where they seem to prop the walls as Mount Atlas props the sky.

Proceeding into this tunnel about a hundred feet we gradually become surrounded in darkness, but it is not so dark in any part that the ties we walk on cannot be seen. Looking at the ceiling we perceive nothing but one black yawning gulf of darkness. One is led to think that the ceiling is only a few feet overhead, but he is greatly mistaken. Picking up a stone we hurl it upwards with all our strength into the darkness and nothing is heard until with a crash it strikes the railroad at our feet or the stones in the brook below. We proceed throwing stones at the ceiling (with no effect) till we have entered the tunnel about two hundred feet. Here we can hear a slight tick as the stone strikes on some solid substance far overhead. Proceeding the ticks become louder and louder after each throwing. In a little while they become crashes, and farther on a child of ten years old would have little trouble in throwing to the top. We can now see the bright opening at the far end, which was made obscure by the winding of the tunnel. On first entering the tunnel we find it turning to our right, then with a curve it wheels around to the left, and by the time we reach the end it has turned around to the right once more, which makes a figure almost the shape of the letter S. At the end of the tunnel we see a magnificent opening, I think far grander than the one we saw as we entered, rising far above and making one of the most imposing arches that can be imagined. We are now out of the tunnel, where once more everything is made bright and beautiful by the golden rays of the sun as it sparkles in the waters, shines upon the trees and the bare rocks which can be seen on every side. We have now gone through and have seen not only one of the greatest curiosities that this world has, but we have seen the only place where a train can enter and go through a mountain opened by the hand of God.

THE LURAY CAVERNS.

At Luray is a beautiful cave, with an endless succession of extensive chambers, ornamented with numerous stalactites and stalagmites. This is numbered among the most noted caverns of the world, and attracts from all parts of the country thousands of visitors curious to examine its wonders, which surpass those of any other known to man. It is now fitted up with electric lights and all conveniences for exhibition.

Hidden in the woods near the top of one of these hills, about a mile east of Luray, an old cave has always been known to exist. Connected with it are traditions which reach back to the Ruffners, the earliest settlers of the Valley, and it has taken their name.

In 1878, Mr. B. P. Stebbins, of Luray, conceived the project of a more complete exploration of it, with a view of making it an object of interest to tourists, and he invited the co-operation of the brothers Andrew and William E. Campbell. These gentlemen declined to go into the old cave, but were ready to engage in a search for a new one, and went ranging over the hills, but for four weeks succeeded only in exciting the astonishment and ridicule of the neighborhood, when, returning one August day from a long tramp, the men approached home over the hill where Ruffner's cave was. In the cleared land on the northern slope, a couple of hundred yards or so from the mouth of the old cave, was a sink-hole choked with weeds, bushes, and accumulation of sticks and loose stones, through which they fancied they felt cool currents of air sifting.

Laboriously tumbling out the bowlders, Mr. Andrew Campbell was finally able to descend by the aid of a rope into a black abyss, which was not bottomless, however, for he soon let go of the rope, and left his companions on the surface to their conjectures. Becoming uneasy at his long absence, his brother also descended, and together the men walked in a lofty passage for several rods, where their progress was stopped by water.

After a few years the cavern was opened to the world and all its splendors displayed by electric light. The following description but faintly shows forth this wonderful work of nature:

The first chamber is about as big as a barn, and from it we proceed upon a causeway of cement for a short distance past the Vegetable Garden, the Bear Scratches, the Theatre, the Gallery; over Muddy Lake on a planking-bridge, which is itself spanned by a stone arch; through the Fish Market and across the Elfin Ramble—a plateau in which the roof is generally within reach of the hand; and so come to Pluto's Chasm.

From the chasm, where there is a Bridge of Sighs, a Balcony, a Spectre, and various other names and habitations, we re-cross the Elfin Ramble, pass successively Titania's Veil, Diana's Bath—the lady was not fastidious—and come to a very satisfactory Saracen Tent.

Then we ascend stairways past the Empress Column—easily empress of all, I think—and proceed under the Fallen Column to the spacious nave of the Cathedral. We pause to note its lofty-groined roof and Gothic pillars—surely in some like scene to this the first architect of that style met his inspiration!—its large Michael Angelesque Angel's Wing and its Organ. Then we sit down and turn to the prostrate stalactite. It is as big as a steamboat boiler, and bears an enormous pagoda of stalagmitic rock, which has grown there since it fell.

Leaving the Cathedral—a narrow, jagged passage—we get an outlook down into a sort of devil's pantheon, full of grotesque shapes and colossal caricatures of things, animate and inanimate, casting odd and suggestive shadows in whose gloom fancy may work marvels of unworldly effect, and then are led by a stairway to a well-curtained room called the Bridal Chamber.

The back door of the Bridal Chamber admits to Giant's Hall, just beyond which is the Ball-Room—both large and lofty apartments, constituting a separate portion of the cave, parallel with the length of Pluto's Chasm. In the Ball-Room we have worked back opposite the entrance, having followed a course roughly outlined by the letter U.

When you find one of these massive, ribbed and rugged pillars vanishing above in a host of curved stalactites, their thin and wavy selvages guiding the eye to tips which seem to sway and quiver overhead; it is hard not to believe it is an aged willow turned to stone. Indeed, the whole scene in many parts is strongly suggestive of a forest with tangled undergrowths, thrifty saplings, fallen logs, and crowding ranks of sturdy trees.

In more than the general effect, indeed, the ornamental incrustations of this cave mimic the vegetable growths outside. Many of the stalactites are embroidered with small excrescences and complicated clusters of protruding and twisted points and flakes, much like leaves, buds and twigs. To these have been given the scientific name of helictites, and the grottoes of Stebbins avenue exhibit them to the best advantage.

Then there are the botryoids—round and oblong tubers covered with twigs and tubercles, such as that cauliflower-like group which gives the name to the

Vegetable Garden; these grow where there is a continual spattering going on. A process of decomposition, dissolving out a part and leaving a spongy framework behind, furnishes to many other districts quantities of plant-semblances that you may name and name in endless distinction. Then, in the many little hollow basins or "baths," and in the bottom of the gorges where still water lies, so crystal clear you cannot find its surface nor estimate its depth—where the blue electric flame opens a wonderful new cave beneath your feet in the unrecognized reflection of the fretted roof, and where no ice is needed to cool nor cordial competent to benefit the taste of the beverage—there the hard gray rock blossoms forth into multitudes of exquisite flowers of crystallization, with petals rosy, fawn-colored and white, that apparently a breath would wilt.

That rigid stone should lend itself to so many delicate, graceful, airy shapes and attitudes, rivalling the flexible flower of the organic world, fills the mind with astonishment and bewilders the eye; and when you have struck the thin and pendant curtain, or the "pipes" of the organ in the Cathedral, and have found that each has a rich, deep, musical resonance of varying pitch, then your admiration is complete.

The cave has not yet much human interest; but we must not forget to follow down a long stairway into a deep and narrow gulch, where the dampness and gloom is little relieved by anything to please the eye. At the foot of the staircase the guide drops his lantern close to a trench-like depression, through which a filmy brooklet trickles noiselessly. No need of interrogation—there is no mistaking that slender, slightly curved, brown object, lying there half out, half embedded in the rock, with its rounded and biloped head, nor its grooved and broken companions. They are not fallen, small stalactites; they are human bones. What a vast vault to become the sarcophagus of one poor frame!

CRAB-TREE FALLS.

Nelson county lies on the southeastern slope of the Blue Ridge, between its summit and James River. Tye River, a bold mountain stream, starts at the summit of the ridge, at Montebello, and cuts through the county, affording great water-power. The Crab-Tree is a large mountain creek emptying into the Tye.

The greatest of all cataraets in the Virginia mountains is the Crab-Tree Falls, reached by the old pike road from Vesuvius to Montebello and the Tye River Valley, east of the Blue Ridge. Sheridan once passed a large part of his army across the mountains by this road. At the very summit, from among the topmost crags of Pinnacle Peak, one of the highest in Virginia, comes the Crab-Tree to take its fearful course. Thence it descends three thousand feet in making a horizontal distance of two thousand, forming "a series of cascades athwart the face of the rock, over which the water shimmers in waves of beauty, like veils of lace trailed over glistening steel." The course of the stream is distinctly visible from a long distance down the face of the great crag, which contrasts sharply with the leafy masses on each side, and forms a striking landmark. The cascades vary from over five hundred feet in the highest, to fifty or sixty feet in the lowest, and are greatly different in form and appearance. The Crab-Tree is not a large stream; in one or two places the entire volume of water is compressed into a shooting jet not more than six inches in diameter, but, through the economy of nature, nothing is lost in artistic effect.

Three miles down Tye River the ascent of the falls is begun by entering the forest and a chaos of massive rocks. "The forest is so dense," says H. L. Brighman, of New York, "that scarcely can the sunlight pierce it. Stately oaks, wide-spreading maples and hickories, the birch and beech, with an occasional pine, and at rare intervals the light gray foliage of the cucumber tree, make up a forest scene of wonderful beauty, scarcely equalled in this country. Then, looking aloft, we see through the leafy rows of tree-tops the white spray of the 'Galvin' Cataract, named in compliment to our guide, and one hundred and fifty feet feet high. This is a clear, bold fall, and rather larger in volume and force than any of the others. The effects of the sunlight and shadow upon the fall and the forest are exceedingly graceful and picturesque, and from the beginning of the ascent, all the way to the top, the scene changes and shifts like a fairy panorama. . . . An hour or more of hard work and steady climbing brings us to the base of the 'Grand Cataract,' the first leap of the entire series, a clear fall of over five hundred feet. It was the Grand Cataract which we had seen from the road far below, and, looking upward from its base, the sight was like a sheet of foam falling out of a clear sky. The water, pure as crystal, is not projected with sufficient force to send it clear of the rock, and so it falls over its face, veiling the rugged front of the mountain as with a fleece. Standing at its base and looking upward, the spectator does not realize its immense height, but comparison of the lofty trees which tower into the heavens, without approaching half the height of the falls, demonstrates the fact. At the very top and crown of the fall, the configuration of the rock gives the current a sharp diagonal set, which adds much to its picturesque beauty. Midway a ledge of a few feet wide arrests the fall and throws it boldly forward in a straight line again adown a sheer and glistening precipice of more than two hundred feet. At the base of the Grand Cataract daisies bloom, and the waters are quite shallow."

It is possible to work one's way upward along these capricious cataracts to the very summit, and thence overlook a wide area of primitive mountain country. All about the observers tower peaks of the first rank, heaving against the blue of heaven a surging mass of foliage. "Dotting the mountain sides in every direction are cleared fields in which corn, wheat and tobacco are raised, the clearings sometimes extending to the very summits, while scattered here and there in all directions, nestling in the intervals and pockets of the ranges, are the log cabins of the mountaineers. Safe in these fortresses and upon a kindly and generous soil, with a genial and salubrious climate, the natives live from one generation to another, an easy, thrifless and contented life. No one who sees the view from the head of the Crab-Tree Falls or Pinnacle Mountain, no matter what his travels or experience in this or any other country have been or may be, will ever be able to forget its matchless charm, repose and serenity."

THE SALT POND.

Professor Rogers, in the report of his geological survey of the State, describes this wonderful lake high up on the Salt Pond Mountain. Its length is about three-fourths of a mile; width, one-half mile; depth, fifty to sixty feet. The water is so transparent that the bottom can be seen in every part. It is not on the summit of the mountain, but from nine hundred to one thousand feet from the base of the particular mountain, and is probably more than three thousand five hundred feet above the level of the sea. The waters are discharged by a

small stream falling in a tiny cascade of great height. The water is not salt. When Professor Rogers visited it between 1834 and 1840, it contained, he says, no living thing but a species of salamander or water lizard. Since then the Fish Commissioner introduced into it fresh-water salmon, and the place has become one of great resort for strangers and tourists.

LESSER CURIOSITIES.

On the suburbs of a little village called Mount Solon, in Augusta county, are two objects of interest well worth mention. A large spring bubbles forth which furnishes a mill about one hundred yards below with water enough to supply two large over-shot wheels. It forms below a lovely deep-blue lake, upon which a tiney boat rides at ease. Just below the dam, a few hundred yards, is what is called the "Blue Hole," which is a peculiarly interesting phenomena. It is walled up vertically on three sides by ledgeless cliffs about twenty feet above the surface of the water; while the fourth side is open and sloping and makes a hole about six or eight feet in diameter. It has been sounded to the depth of one hundred and eighty feet without sign of bottom. The water is as blue as indigo, and when ruffled the crest of the wave shows a green tinge, sometimes olive; with small fish, with a few of larger size.

In the county of Bath there are many natural formations which are remarkably unique and peculiar. Being mostly of limestone formation, it has many caves; one of these, recently reported, is near the Bath Alum Springs. It has been explored several miles without an end being found. This cave is remarkable for a beautiful formation resembling moss, of all colors, with which its many apartments and passages are covered. This cave has its "bottomless pit" and "Lot's wife," a solitary white figure, standing on the brink of the pit, and "grape arbor."

The most remarkable cave is the Blowing Cave, situated near Milboro Springs. No matter in what way the wind is blowing there is neither increase nor decrease of the current flowing from it.

Many of Bath's springs are natural curiosities. The Hot Springs, the only one in Virginia that merits the name, has been an object of curiosity as well as a resort for the afflicted for a century.

In the valley of the Cow Pasture is a remarkable spring known as the Flowing Spring. This spring ebbs and flows, but not at stated times; wet or dry weather affects it not. The tide is apt to rise in dry as wet weather, and rises about four feet. Another is the Bottomless Spring, the depth of which cannot be fathomed.

There is a path running from top to the bottom of the mountain, between two ledges of rock about ten feet wide; that is called the "devil's race-path." The scenery here is very grand—lofty mountains, rushing rivers, precipices crowned with giant pines, and a valley lying far away, quiet and peaceful, blue and hazy. A hickory tree is seen growing upon the east bank of the McDowell and Williamsburg roads. Upon its bark may be seen the letters J. M. P., in white, about five inches high.

CLIMATE.

Virginia, as a whole, lies in the region of "middle latitudes," between $36^{\circ} 30'$ and $39^{\circ} 30'$ north, giving it a climate of "means" between the extremes of heat and cold incident to States south and north of it.

If Virginia were a plain, the general character of the climate of the whole State would be much the same; but the "relief" of its surface varies from that of some of its large peninsulas not more than ten or fifteen feet above the sea level, to that of large valleys more than two thousand feet above that level. Long ranges of mountains from three thousand to four thousand feet in height run entirely across the State, and the waters flow to all points of the compass. So diversified are the features of the surface of the State, within its borders may be found all possible exposures to the sun and general atmospheric movements. It follows from these circumstances that here must be found great variety of temperature, winds, moisture, rain and snowfall, beginning and ending of seasons, and all the periodical phenomena of vegetable and animal life depending on "the weather."

The winds are the great agents nature employs to equalize and distribute temperature, moisture, etc. Virginia lies on the eastern side of the American continent and on the western shore of the Atlantic ocean. It extends to and embraces many of the ranges of the Appalachian system of mountains that run parallel to that ocean shore; therefore it is subject not only to the general movement of winds, storms, etc., from west to east, peculiar to the region of the United States, but to modifications of that movement by the great mountain ranges. It is also subject to the great atmospheric movements from the Atlantic that, with a rotary motion, come up from the tropics and move along the coast, extending their influence over the Tidewater and Middle regions of the State; sometimes across Piedmont to the foot of the Blue Ridge, but rarely ever over or beyond that range. The numberless lines of mountains from the Blue Ridge to the Cumberland, all the way across its extent from up in Pennsylvania down into North Carolina unbroken, protects the State against the cold winds and storms and blizzards of the Northwest. This barrier is absolutely effectual; they never reach this land. The peculiar formation of the Appalachian chain running southwest into South Carolina and Georgia, with ranges bearing west into Tennessee and Alabama, protect us from the cyclones that form in the heated waters of the Gulf and rush northeast. The formation of the southern end of this range of mountains turns the southwest storms and tornadoes either up the Cumberland range northeast or across the Gulf States to the Atlantic ocean. It has also surface winds, usually from the southwest, that follow the trend of the mountains and bring to them and their enclosed parallel valleys the warmth and moisture of the gulf that clothes them all with an abundant vegetation.

The same causes that produced the magnificent forests of the carboniferous era and furnished the materials for the vast deposits of coal in the sixty thou-

sand square miles of the great Appalachian coal-field that flanks Virginia on the west, still operate and clothe the surface of the same region with an abundant vegetation. The laws of the winds make one region fertile and another barren. America owes its distinction as the Forest Continent to the situation of its land masses in reference to the prevailing winds.

The mean annual temperature for the State is 56°; for the Tidewater region, 58°; for the Middle and Piedmont, 35.60°; and for the Valley, 54°. The average mean temperature of the State for January is 42°, and for July 78°.

The notable points about the climate are, first, its range—from that of the southeastern low plain, fronting the Atlantic and tempered by it, to that of the high mountain plateaus of the northwestern margin, where cold temperate conditions prevail; second, its mildness, on the whole, notwithstanding this considerable range; third, its dryness, although the rainfall is abundant, and, compared with most European countries, large. The climate is healthful and favorable to a great variety of agricultural products.

The rainfall is next in importance to the temperature in the climate of a country, for heat and moisture are the two great requisites for abundant production when a fertile soil is present.

Guyot, a standard authority, says: "North America has in the eastern half a greater amount of rain than either of the other northern continents in similar latitudes." . . . "The great sub-tropical basin of the Gulf of Mexico sends up into the air its wealth of vapors to replace those lost by the winds in crossing the high mountain chains. Hence the eastern portions—the great basins of the Mississippi and the St. Lawrence and the Appalachian region—which, without this source of moisture, would be doomed to drought and barrenness, are the most abundantly watered and the most productive portions of the continent." "In the eastern half of the United States the southwesterly winds which prevail in the summer spread over the interior and the Atlantic plains an abundant supply of vapors from the warm waters of the Gulf. Frequent, copious showers refresh the soil during the months of greatest heat, which show a maximum of rain. Thus the dry summers of the warm-temperate region disappear, and with them the periodical character of the rains so well marked elsewhere in this belt."

These quotations show the advantages Virginia has, in this respect, over the warm-temperate regions of Europe and elsewhere.

The last decade has settled the fact beyond dispute that Virginia is the safest and best climate in the world, taking all things that conduce to the comfort of families into consideration.

The following tables, furnished by the Weather Service of the State Board of Agriculture at Lynchburg, will be found interesting to anyone seeking a home in Virginia. Lynchburg is half way between Norfolk and the Tennessee line at Bristol, and is not far from half way—north and south—between North Carolina and West Virginia. The table of twenty-one years at that point must indicate a most reliable report of the continuous temperature and rainfall not only at that point, but for a large part of the State. Lynchburg is in the great James River Valley, reaching from the West Virginia line to the sea, and liable to all currents of cold from the north or wind storms from the ocean. Its water level is over five hundred feet above the tide, and its main land fully eight hundred, occupying a point on the Piedmont line. The monthly reports of both temperature and rainfall for twenty-one years preclude even a tendency to storms:

Average Monthly and Annual Mean Temperature.

CLIMATE.

YEAR.	Jan.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Annual Means.
1871	33.8	34.8	39.0	57.2	66.9	71.9	77.8	76.7	62.1	57.1	43.5	35.4	· · · · ·
1872	33.4	38.4	41.8	55.6	62.4	71.5	78.2	73.2	63.7	65.0	40.8	31.3	54.5
1873	39.6	40.5	47.4	50.6	65.8	77.1	76.8	71.9	69.4	66.5	45.0	40.6	56.8
1874	33.6	33.2	45.2	52.6	65.3	73.9	77.6	73.1	65.6	65.4	44.6	42.2	55.2
1875	41.4	42.5	43.2	55.0	66.0	76.0	82.0	77.4	68.0	64.1	47.7	31.4	57.3
1876	31.3	44.0	46.0	55.1	61.7	75.8	81.2	78.6	70.3	62.0	50.0	45.7	58.8
1877	36.4	43.2	58.7	61.0	65.2	70.4	81.7	77.4	69.6	68.4	48.0	35.5	58.4
1878	35.8	36.8	50.2	53.3	67.0	74.2	79.4	75.1	65.3	62.7	47.2	44.9	57.8
1879	46.0	43.6	47.0	59.1	70.8	75.2	77.6	75.8	67.4	50.4	42.2	34.3	58.0
1880	33.5	38.4	44.2	53.7	69.6	75.7	81.3	79.8	78.8	65.5	50.0	45.4	59.7
1881	33.8	45.7	49.4	56.0	61.8	74.5	75.2	74.9	70.0	62.5	45.8	35.6	57.6
1882	33.2	44.4	43.3	55.4	66.8	75.0	78.0	74.2	67.0	59.3	49.2	40.7	57.2
1883	32.6	45.2	47.4	54.2	67.4	71.7	76.0	75.3	72.5	63.4	46.3	40.2	57.7
1884	35.8	32.0	39.6	55.6	64.0	73.4	77.6	75.6	68.2	54.8	45.8	40.4	55.2
1885	31.8	36.6	45.9	57.4	65.8	71.2	75.6	75.0	70.4	57.6	47.2	34.1	55.7
1886	35.6	44.8	43.8	53.6	68.8	72.6	80.6	75.2	67.4	56.4	47.4	37.9	57.0
1887	35.6	40.5	43.2	56.1	64.7	74.1	75.2	76.8	64.6	54.0	49.4	40.0	56.2
1888	41.2	34.8	46.7	57.0	66.0	71.7	76.2	72.4	66.7	54.4	48.2	50.6	57.9
1889	47.2	47.2	44.6	57.2	66.3	76.6	75.6	74.0	70.0	57.5	51.4	38.5	58.8
1890	38.5	43.6	40.6	58.2	62.2	73.8	73.2	74.1	71.6	54.8	44.6	44.3	56.6
1891	35.1	40.6	42.7	53.8	66.2	76.5	76.8	77.5	67.2	56.9	44.7	38.0	56.3
Sums.	776.2	850.8	944.9	1169.7	1380.7	1552.8	1633.6	1594.0	1447.7	1211.5	977.6	831.7	1197.0
Means*.	37.0	40.5	45.0	55.7	66.7	73.9	77.8	75.4	68.9	67.7	46.6	39.6	57.1

* For twenty-one years (data for 1871 not included in Sums and Means).

UNITED STATES WEATHER BUREAU, LYNCHBURG, VA.

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Monthly, Annual, and Average Precipitation (Inches).

HAND-BOOK OF VIRGINIA.

YEAR.	Jan'y.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Sums.	Means.
1871 . . . . .	...	...	...	...	...	...	...	...	...	4.42	3.08	4.00	1.52	3.76
1872	2.08	1.99	4.20	3.20	3.15	2.53	1.56	2.27	1.02	2.44	3.50	2.51	30.45	2.54
1873	4.32	5.92	2.53	3.37	9.42	5.17	2.86	10.03	1.64	2.65	2.83	1.87	52.61	4.38
1874	4.13	3.66	1.94	8.33	1.35	6.50	3.89	3.61	3.68	2.59	2.50	1.87	44.35	3.70
1875	2.82	5.29	6.48	3.09	1.56	3.49	1.90	5.79	2.57	1.15	3.83	3.92	41.89	3.49
1876	1.04	2.96	6.07	1.67	3.11	4.91	2.30	4.82	7.85	1.44	2.50	1.38	40.65	3.34
1877	4.51	0.42	2.44	4.02	2.01	1.13	3.43	1.77	3.71	8.64	9.65	1.97	43.70	3.64
1878	4.15	1.79	2.99	4.92	4.00	3.51	2.08	5.17	2.78	4.57	3.91	5.26	45.13	3.76
1879	4.55	1.96	1.08	1.85	1.46	2.08	3.44	7.79	1.91	2.66	1.88	6.25	36.81	3.07
1880	2.16	2.73	6.71	4.07	2.17	4.17	5.75	3.20	1.57	1.33	3.26	1.63	38.75	3.23
1881	4.47	2.37	2.57	2.14	2.20	1.67	3.88	0.30	2.07	4.09	3.59	6.22	35.57	2.96
1882	5.34	3.66	4.33	2.30	3.15	4.06	4.10	5.49	8.87	1.75	0.81	3.04	46.90	3.91
1883	4.58	2.94	3.11	4.84	1.19	4.04	0.19	1.87	5.57	4.47	1.14	1.91	35.85	2.99
1884	5.15	6.86	6.97	2.35	2.74	4.16	2.32	2.85	1.24	0.54	2.87	5.06	42.61	3.55
1885	4.37	1.18	1.39	5.36	3.30	4.26	1.56	1.38	8.67	2.83	3.16	40.95	3.41	
1886	4.56	3.81	5.79	4.82	6.74	8.48	3.31	4.29	1.74	1.01	4.49	2.81	51.85	4.32
1887	2.64	3.51	2.58	3.29	3.59	3.65	4.92	4.73	3.11	3.31	1.01	4.28	40.62	3.38
1888	2.99	3.59	5.25	1.67	5.75	2.24	2.59	4.47	10.58	4.41	2.74	2.20	48.48	4.04
1889	5.26	3.06	2.44	3.14	7.14	3.82	10.94	3.89	10.69	4.90	4.86	0.51	60.53	5.05
1890	1.59	4.22	3.16	1.98	4.71	1.63	4.88	3.81	1.94	5.18	0.03	5.14	38.22	3.18
1891	6.04	5.59	7.44	3.89	5.35	1.70	5.46	5.76	1.69	0.62	2.35	3.98	49.97	4.16
1892	5.62	3.11	3.40	4.13	2.51	3.45	5.74	0.80	2.31	0.04	4.68	1.75	37.54	3.13
Sums	82.87	72.93	82.66	69.96	79.26	75.94	79.75	84.20	77.92	65.46	64.71	66.72	902.88	75.23
Means*	3.92	3.47	3.94	3.33	3.77	3.62	3.80	4.01	3.71	3.16	3.08	3.18	42.99	3.58

* For twenty-one years (data for 1871 not included in Sums and Means).

STATIONS OF VIRGINIA WEATHER SERVICE.*
Total Monthly and Annual Rainfall (inches and hundredths).

STATIONS.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Ann ^u l.	Period of Years.
Princess Anne county:														
CAPE HESPEY, VA.	4.38	3.50	4.68	3.81	4.35	3.77	5.30	5.43	4.26	4.91	2.16	3.20	49.45	1882-1891
Norfolk county:	4.25	3.22	4.28	3.24	4.06	4.51	5.21	5.87	4.25	3.16	2.72	3.92	48.69	1879-1888
Northampton county:														
BURNEST, VA.	4.61	4.15	5.54	4.04	4.64	2.92	4.86	5.10	4.05	4.73	2.36	3.73	50.78	1882-1891
Elizabeth City county:														
FORREST MONROE,	3.55	3.54	3.96	3.48	4.21	3.91	4.87	4.50	3.35	3.74	1.71	3.09	43.86	1882-1891
HENRICO county:														
RICHMOND, VA.	3.54	3.72	4.04	3.52	4.73	4.16	4.29	4.45	4.27	3.70	2.28	3.15	45.86	1882-1891
CAMPBELL county:														
LYNCBURG, VA.	3.92	3.47	3.94	3.33	3.77	3.62	3.80	4.01	3.71	3.16	3.08	3.18	42.99	1872-1892
PULASKI county:														
SNOWVILLE, VA.	3.66	1.39	2.90	2.54	2.37	3.21	2.54	2.61	3.17	3.19	2.22	2.67	32.97	1877-1885
ROCKAWAY county:														
LEXINGTON, VA.	3.41	2.84	3.53	3.72	3.87	3.56	4.12	3.36	3.60	2.90	3.33	2.74	41.58	1869-1873
Augusta county:														
MOUNT SOLON, VA.	1.85	1.65	2.12	3.12	2.44	3.86	3.02	4.22	2.94	2.03	3.05	2.26	32.56	1871-1880
Rockingham county:														
DALE ENTERPRISE, VA.	3.02	3.60	3.82	3.83	6.46	5.70	4.34	4.59	4.03	3.52	2.57	4.05	48.05	1882-1891
FAIRFAX county:														
WOODLAWN and ACCOTINK, VA.	4.60	3.18	3.93	2.47	3.48	3.65	4.47	3.79	2.69	3.00	2.16	3.14	40.56	1877-1886
WASHINGTON, D. C.	3.05	2.89	3.39	3.31	3.70	3.71	4.27	3.99	3.28	3.24	2.70	2.89	40.42	1824-1890
MEANS FOR VIRGINIA	3.65	3.14	3.84	3.36	4.01	3.88	4.26	4.37	3.63	3.41	2.54	3.05	43.14	.....

* This table, made up from thirteen stations, representing nearly all the different sections of the State, indicates most clearly that the rainfall for the State is not widely variant from the monthly average at a large majority of the stations in different parts of the State.

STATIONS OF VIRGINIA WEATHER SERVICE.
Average Monthly and Annual Mean Temperature (Degrees).

STATIONS.	Jan'y.	Feby.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l.	Period of Year.
Princess Anne county:														
CAPE HENRY, V.A.	40.4	43.0	44.8	53.8	61.3	72.7	77.2	75.8	71.9	62.2	52.7	44.1	58.6	1881-1890
Norfolk, V.A.	40.4	43.9	46.0	55.4	66.3	74.3	78.2	76.2	71.6	61.6	52.2	44.0	59.2	1881-1890
Northampton county:														
Brunswick, V.A.	39.7	42.6	44.3	54.9	66.0	74.6	79.1	77.3	71.9	61.4	50.8	42.7	58.3	1882-1891
Elizabeth City county:														
Fortress Monroe, V.A. . .	38.6	41.2	44.6	54.3	65.6	74.1	78.2	76.6	72.2	61.7	51.3	42.4	58.4	1881-1890
Henrico county:														
RICHMOND, V.A.	37.3	42.9	44.9	56.4	67.0	74.9	77.7	76.8	71.4	60.4	49.2	42.0	58.4	1881-1890
Campbell county:														
Lynchburg, V.A.	37.0	40.5	45.0	55.7	65.7	73.9	77.8	75.4	68.9	57.7	46.6	39.6	57.1	1872-1882
Pulaski county:														
Snowville, V.A.	33.8	38.5	42.9	53.8	61.9	68.9	73.0	71.3	65.4	56.8	43.4	36.8	53.9	1877-1886
Rockbridge county:														
Lexington, V.A.	32.5	35.5	42.8	52.7	62.9	71.3	76.3	73.3	64.5	53.1	41.3	34.0	53.4	1870-1879
Augustia county:														
Mr. SOLON, V.A.	34.4	36.2	42.8	54.0	62.3	70.3	74.4	72.0	64.2	54.5	42.3	34.5	53.5	1871-1880
Rockingham county:														
DALE ENTERPRISE, V.A. . .	33.5	37.6	41.1	54.1	65.2	72.2	75.7	74.1	69.1	56.7	45.6	37.6	55.2	1882-1891
Fairfax county:														
WOODLAWN and ACCOTINK, V.A. . .	33.1	37.5	43.4	55.0	65.6	74.2	79.1	76.2	70.5	60.6	46.7	37.6	56.6	1877-1886
Fairfax county:														
FALLS CHURCH, V.A. . . .	34.3	38.5	42.7	53.2	65.0	72.7	77.8	74.8	69.0	59.5	45.9	36.4	55.8	1875-1884
WASHINGTON, D. C.	32.9	35.8	42.7	53.5	64.1	72.8	77.0	74.8	67.5	55.7	44.6	35.8	54.8	1820-1890
MEANS FOR VIRGINIA	36.0	39.5	43.7	54.4	64.8	72.8	77.0	75.0	69.1	58.6	47.1	39.0	56.4	.....

*This table made up from thirteen stations, representing nearly all the different sections of the State, indicates most clearly that the mean temperature for the State is not widely variant from the monthly average at a large majority of the stations in different parts of the State.

The following tables are compiled from stations most widely variant, still the yearly average of temperature and rainfall is not largely differing:

MONTHLY TEMPERATURE.		Richmond.	Lexington.	Norfolk.	Big Stone Gap.
December, 1891		47.2	34.9	48.5	37.7
January, 1892		39.2	28.6	40.5	31.7
February, "		43.9	38.3	41.9	38.8
March, "		44.9	40.9	43.6	39.4
April, "		57.7	52.1	56.0	52.7
May, "		69.9	62.9	67.1	58.9
June, "		78.4	73.3	76.4	67.4
July, "		78.4	73.9	76.4	69.4
August, "		80.0	73.4	79.3	71.2
September, "		69.7	63.3	70.6	63.6
October, "		58.8	53.0	59.1	52.8
November, "		47.1	41.2	49.2	39.4
Annual average.		59.6	53.0	59.0	51.9

MONTHLY AND ANNUAL PRECIPITATION FOR 1892.		Big Stone Gap.	Birdsmeet.	Lynchburg.	Petersburg.	Standardsville.	Marion.	Washington.
December, 1891		4.82	1.90	3.98	1.26	2.51	8.65	2.80
January, 1892		5.79	5.50	5.62	4.77	5.59	4.41	5.84
February, "		3.84	3.25	3.11	3.28	2.40	1.79	3.64
March, "		3.68	5.80	3.40	3.17	4.05	2.31	5.70
April, "		9.07	7.00	4.13	5.51	2.93	5.10	4.52
May, "		5.10	3.55	2.51	3.30	2.20	3.91	4.07
June, "		7.55	1.70	3.45	5.01	4.10	5.43	2.59
July, "		4.27	5.05	5.74	5.02	1.22	4.74	5.03
August, "		2.81	7.25	0.80	3.97	8.84	2.46	0.85
September, "		1.59	1.75	2.31	3.46	4.40	2.45	3.55
October, "		0.38	0.40	0.04	0.43	0.42	0.55	0.34
November, "		6.15	8.65	4.68	3.55	3.54	5.82	3.38
Annual.		55.05	46.80	39.77	42.73	42.20	42.42	42.31

Take for the highest the month of August—the hottest month, and in the two largest cities of the State; and for the lowest, January, at Lexington, in the highest part of the Valley, and Big Stone Gap, high up in Appalachia—the highest and coldest section of the State—and it will be seen that at all, the average annual temperature is mild, with a difference hardly material. So as to the rainfall, taken on the coast, as at Birdsnest or the southside head of Tidewater, Petersburg, and at Stanardsville, in north Piedmont, Marion, in the Valley, and Big Stone Gap, in Appalachia, and the average of these will differ but little in rainfall or temperature from the average of all the stations in the State. These figures show a climate wonderful in its "means" of temperature and precipitation. The past year, including January and February, 1898, was exceptional. The rains from February to October were mainly confined to sections, afterward reduced to counties, often to small neighborhoods, resulting in a "dotted crop"; in one place good; in a contiguous locality bad. The months of December and January past are known to have been the coldest and most severe, certainly, since 1857, and probably longest in duration since 1840-'41, but no blizzard, carrying death and devastation in its track; no ice-gorges or floods, destroying towns and cities and carrying off crops, reached this safely located and naturally defended land.

THE FORESTS.

The forests of Virginia are large and the timber varied and the lumber trade important.

Tidewater Virginia has extensive forests of pine (the noted yellow Virginia), oak, cypress, cedar, locust, etc., from which large quantities of sawed lumber and timber, staves, heading, hoop-poles, shingles, railway ties, fire-wood, etc., are constantly shipped, very often from the edges of the forests, since sailing vessels can penetrate all portions of the section, directly to all the seaboard markets of the country. In some of the lower counties are large quantities of fine chestnut timber. All along the banks of some of the rivers we find the white mulberry—the *morus alba*—growing in great profusion, offering an inviting field for silk-raising. This tree was introduced from Europe by Governor Digges, one of the colonial governors, and has made itself at home along James River and its lower tributaries, flourishing and propagating itself as if indigenous.

The Middle section has large areas of superior hard pine, black, white and other oaks, hickory, locust, persimmon, gum, cedar, holly, and other trees, from which much excellent lumber, tanbark, etc., are sent over the railways and canals that penetrate and cross it to various markets. The "Sylva" gradually changes as we ascend from the Tidewater division to Piedmont. The cypress disappears, the long-leaf pine ceases to grow after the first tier of counties is passed, and the cedar and holly, the gum and willow oak, become more and more infrequent. The short-leaf, or hard yellow pine, furnishes its valuable timber in every part of Middle Virginia, but does not take exclusive possession of large tracts of land as in Tidewater, except where it is found as "second growth" on lands which have been cultivated and then turned out to grow up again. There it takes the place of the genuine "loblolly" or old-field pine of Tidewater—the long-leaf variety—the *pinus taeda* of botanists. In the forests of Middle Virginia the pine (short-leaf, yellow, and two other varieties too rare to deserve a description) grows along with the various oaks, the tulip tree, hickory, walnut, locust, maple, ash and other timber of minor importance; and on the streams sycamore, beech, birch, willow and maple. At some distance from the mountains we again find chestnut in large quantities. In fine, the forest growth of this section is of singular variety, beauty and value.

Piedmont has considerable forest land, with many varieties of oak, hickory, tulip poplar, black walnut, locust, cedar, chestnut, pine, and other timber trees, but it can hardly be considered a source of supply for timber for exportation, save in a few localities.

The Blue Ridge is mostly covered with forests of oak—white, black, red, rock, etc.; hickory, chestnut, locust, birch, some excellent yellow pines, and

other trees. This section has furnished great quantities of charcoal for the manufacture of iron from the ores of its western margin, and it will long be a source of supply, so rapidly do its forests renew themselves. The timber supply of pine and other woods, for the eastern part of the Valley, is drawn from the Blue Ridge. Here is found much valuable hard wood, as hickory and oak, for wagon and agricultural implement making. This is yet to become a most important source of supply for oak tanbark to convert into quercitron for exportation, or to be used in the country for tanning. Almost any quantity of oak bark can be obtained from this extensive range.

The Valley has nearly half its surface covered by a growth of oaks, hickories and locusts, interspersed with black and white walnuts, yellow and other pines, all having a uniform age of one hundred and fifty to two hundred years. This timber, while not the largest, is of the very best quality, and no well-settled portion of the Union can offer a larger quantity of timber suitable for wagon, carriage, railroad car, cabinet and other work, for which hard, sound and durable woods are required.

The Appalachian country is both rich and poor in forestal wealth. On the sandstone mountain ranges, and in the slate and shale valleys, the trees are small, but the growth is dense, consisting of oaks and other hard woods, pines, etc., good for charcoal, with larger trees in the hollows and more fertile spots. On the limestone ridges and adjacent valleys, as also in the calcareous and some shale valleys, on the other hand, the oaks, walnuts, white and yellow tulip poplars, birches, beeches, locusts, cherries, sycamores and other timber trees, are found of a sound growth and very large size, often several feet in diameter, straight and without a limb for fifty to eighty feet from the ground. Only portions of this region have been reached by railroads, and extensive forests of the best of timber for nearly all purposes await the progress of internal improvements and future demands. There are some extensive forests of white pine and of the more common varieties of the fir tribe, but generally the *Coniferæ*, suitable for timber, are not abundant in the forests of this section. It is fortunate that there is so much excellent coaling timber here in the vicinity of large deposits of easily fused ores of iron. It is from these mountain forests that ginseng, snake root, sarsaparilla and other medical plants are obtained. Nuts are found in all sections, embracing chestnuts, chinquapins, black walnuts, white walnuts or butter nuts, hickory nuts of several kinds, hazel nuts, beech nuts, acorns of many varieties, etc.

In 1880, the census report showed 8,510,113 acres of improved land, and 11,325,672 acres unimproved, of which last 9,126,601 acres were woodland and forest. The probability is that it is about the same now as to woodland and forest, although a considerable portion of the 2,000,000 acres of "old fields" and brush may have been converted into fair, fertile land.

The following is a fair catalogue of the trees of Virginia now growing wild in the different sections:

The oaks: White oak, post oak, swamp white oak, chestnut oak, yellow oak, red oak, scarlet oak, black oak, black-jack oak, Spanish oak, pin oak, willow oak, bear oak, bastard live oak, scrub white oak, water oak, turkey oak.

The pines: The table mountain pine, white pine, pitch pine, *Jersey scrub pine, yellow pine, *loblolly pine, hemlock pine.

* Ro. M. Brown, Esq., of Amherst, found by sowing the cones from all pines five different and distinct varieties of "old-field pine," making fuel in ten years,

Cypress, juniper, bay laurel, red cedar, white cedar (*arbor vitae*), umbrella tree, white wood (white poplar), yellow poplar, *Lombardy poplar, pawpaw custard apple), linden, fringe tree, *catalpa, sassafras, slippery elm, red elm, water elm, winged elm, sugar berry, horn beam, red mulberry, *white mulberry, * moris multicualis, sycamore, black walnut, white walnut (butternut), shell-bark hickory, white hickory, red (mochermes) hickory, pignut hickory, butternut hickory, chinquapin, chestnut, beech, water beech, ironwood, cherry birch, red birch, black alder, holly, sugar maple, red maple, curled maple, bird-eye maple, box elder or ash-leaved maple, stag horn (sumac), poison elder (thunder tree), common locust, yellow (mountain) locust, honey locust, red bud, (Judas tree), wild plum (*Prunus Americanus*), wild cherry—red (P. *Penna*), wild cherry—black (P. *Scrotina*), nine bark (*Spiraea Opulofolia*), southern crab, scarlet fruited thorn, wild currant (June or Service berry), witch hazel, sweet gum, swamp dogwood, *ailanthus (*Paradise*), black gum, black haw, laurel (ivy), rose bay (*Rhododendron*), persimmon, white ash, black willow, weeping willow, white willow, golden willow, silky willow, * aspen, dogwood, lashhorn, cucumber, cottonwood, buckeye ash, swamp huckleberry, hazelnut, * *Paulonia*, * Silver maple, spicewood, yew, *paper mulberry.

FLOWERS.

The flowers which cover the untilled fields and bloom and blush unseen in forest dells form no small part of the beauty which makes this land of blue mountains and silvery streams “the fairest land the sun shines on.”

In spring-time every stream is fringed with blooming flowers and white banners wave on every breeze. Wild roses, ferns, Rhododendrons, forest pinks and wood violets spring up everywhere, while daisies and yellow buttercups line every pathway. Of cultivated flowers, everything grows in the open air that can be raised in a temperate climate. Much attention is given to flowers, and there are few homes, however humble, that have not flower-beds of lilies and tulips, or climbing vines or bushes of roses. In the cities flower-culture, especially roses, is found to be a paying industry.

* The ailanthus, catalpa, white mulberry, aspen, Lombardy poplar, *Paulonia*, paper mulberry, and Silver maple were imported, but may now be found as indigenous, growing in the woods from seed.

THE FRUITS.

Every portion of the State is remarkably well adapted to the growth of fruits that belong to the warm-temperate and temperate climates.

In Tidewater Virginia apples, pears, peaches, quinces, plums, cherries, nectarines, grapes, figs, strawberries, raspberries, running and bush blackberries, gooseberries, currants and other fruits thrive and produce abundantly, the quality of the products being unsurpassed, as the awards of the American Pomological Society attest. The value of the small fruits alone annually sent to market from Tidewater is more than the sums for orchards and gardens. The trade in early strawberries is one of large proportions. Especial mention should be made of the wild Scuppernong grapes, peculiar to the Tidewater country near the sea, which spread over the forests and bear large crops of excellent fruit, from which a very palatable wine is made. The originals of the Catawba, Norton's Virginia, and other esteemed American grapes grow wild in the forests of Virginia.

All the fruits named above grow in every section of the State, except, perhaps, figs. Piedmont, the Blue Ridge and the Valley are famous apple regions. Peaches flourish in all sections, but Middle and Tidewater may claim some precedence in adaptability. The Blue Ridge is entitled to the name of the "fruit belt," and its extensive area is yet to become the most noted wine and fruit-producing section of the United States east of the Rocky Mountains. All the fruits of Virginia flourish there in a remarkable manner, and find special adaptations of soil, climate and exposure.

From an address delivered by H. L. Lyman, Esq., before the American Pomological Society, to which he was accredited by the State Board of Agriculture, are made most of the following extracts:

CHERRIES.

"A visitor to the shrine of Democracy, Monticello, the home of the lamented Jefferson, would be struck with the size and vigor of the many cherry trees which abound at that place, and upon investigation he would receive the interesting information that some of these trees are a hundred years old, and are still yielding annually large crops of fruit. This is true of Carter's Mountain, immediately opposite Monticello, as well as of the entire southwest mountain range. The success of the cherry in Piedmont Virginia is an established fact in the minds of all knowing ones, and is rapidly assuming important proportions.

"A surveyor, in measuring the shade cast at noon, by one of these trees, found it to measure about thirty-five yards in diameter, which would give about six such trees to the acre. These centenarians are of such great vitality in this, their chosen home, that great limbs sawed or broken off by vandal gatherers annually do not seem to materially affect them.

"A fellow-countyman, my mountain neighbor, from three or four ancestral cherry trees makes more in three weeks of cherry harvest than he formerly made from a year's hard toil in tobacco. Fifty-eight of his selected Napoleons weighed one pound, and so did fifty of his Tartarians.

"The mountain district referred to is full of Mazzard seedlings, which are very luxuriant in growth, beautiful in form, and immensely productive.

THE PEACH.

"The peach, the nectarine and the apricot are all mentioned by Beverley as growing abundantly in Virginia in 1720, and such was the extent of peach culture that the brandy was, according to Jefferson (see his works, Volume VIII., page 406), largely exported, and, with apple brandy, formed one-fourth as much in value annually as the wheat export of the colony.

"It is known that peach orchards were in many instances planted purposely for feeding swine.

"Peach trees planted by the early settlers have been known to continue to renew heads directly from the roots through two or three generations of owners.

"To-day first-class seedling peach orchards are to be found in the natural peach belt of Virginia, and extending through Western North Carolina and Eastern Tennessee, and they are a wonder for vigor and productiveness.

THE APPLE.

"The apple is the queen of all fruits of our State, and is deserving of our careful study and best efforts for its successful growth. Early in our colonial history the landed proprietors came with their families and possessions, and brought with, or caused to be sent after them, many of the desirable fruits of England, France, Italy, Russia and Germany; and the results of their efforts of some two centuries ago are to be found throughout our entire apple belt.

"The immense number of desirable varieties found in the mountains, foothills and valleys, are so many evidences of the wisdom displayed by our forefathers in the planting of superior varieties in the midst of natural environments. As Virginia stands in reference to her tobacco, her white wheat, her horses, sheep, trucking, oysters, her timber and her minerals, so she stands with respect to the apple.

"Her wonderful wealth of seedlings, in which color, size, flavor, odor and texture vie with each other in the effort to attain perfection, and the many instances of the happy blending of these qualities, command our admiration.

"To be afforded a good dessert and cooking apple for the entire twelve months of the year is a common thing in our State with those who have given the matter careful attention; nor do I mean to be understood as including any indifferent kinds in the selection of the supply.

"Of the many native apples of Virginia, an early writer mentions the following, all of which here named are given prominence for general merit: Beverley's Red, Carthouse, Curtis, Gloucester White, Nansemond Beauty, the James River or Limbertwig, Pryor's Red, Rawles' Janet, Royal Pearmain, Striped June, Virginia Greening, Piedmont Pippin, Pilot, Nelson Rock, Annette, Golden Dixie, the Abraham, Bowers' Nonpareil, Virginia Quaker, Virginia Spice. But perhaps among the very earliest of our apples of note were the celebrated cider apples, the Taliaferro, the Virginia or Hewes' Virginia Crab and the Red Streak.

"I cannot abstain from saying that I regard as the apple of apples, whether produced in this or any other country, so far as I have been able to judge, the apple which has secured the official recognition of the Queen, which has never failed to bring from two to four times the price of other varieties, and which in the English and American markets is pronounced superior to the Newton pippin, is the Albemarle pippin, queen in the galaxy of apples, and native of a section extending for thirty miles along the eastern slope of the Blue Ridge of Albemarle and the country immediately contiguous thereto—a section deserving of the name so frequently given it by all apple buyers who visit it—viz.: The Mecca of the Apple.

"It stands amongst seven of the seedlings named to you, and has its close competitors in over two of them.

"In our rich mountain lands and chocolate foothills individual excellence is portrayed in specimens without number, and trees are found to produce as many as thirty barrels of fruit; nor is this the case in extremely isolated instances only.

THE PEAR.

"This fruit is found to grow in our State from the extreme southwestern table-lands of the Alleghanies to her Atlantic-washed shore.

"Who of you has failed to realize the productiveness of our State in this department?

"We have a gentleman with us to-day who has spent many years in this field of pomology, who can vouch for the statement that nowhere in the United States can more favorable conditions be found for combining size, color, texture and flavor in this delicious fruit.

THE QUINCE.

"This fruit is found to do well in the mountain regions of our State, as well as through the Valley of Virginia, but requires the use of the fungicide in Piedmont to defend it from destructive attacks of blight. Tidewater has not been able to make any headway in its attempt at growing it.

"With regard to the strawberry, we have here a grower who tries every known variety of the South, West or North, and who is himself engaged in the production of new varieties. His sixty-five acres of market patch speaks for itself all along the line from Washington to Boston.

"Concerning the raspberry and all the other small fruits mixed in with the vegetable shipments from Norfolk during the season of last year, they aggregate out of that Tidewater port alone the magnificent sum of \$5,000,000, though, of course, the vegetable interest represented the largest share."

In 1889 the Commissioner of Agriculture said: In the last year there has been a great increase in the planting of fruit and the erection of canneries. The increase in the preparation for producing and canning peaches and berries and the evaporation of apples is very great, and the exhibition of fruit at the Exposition has astounded those unacquainted with the fruit sections. It is now an established fact, that Virginia has the greatest range of fruit production of any State in the Union. Her tidewaters and southern borders in fruits and berries can vie with States bordering on the tropics, while her grand mountain range, reaching down into Piedmont Virginia, furnishes many winter apples rivalling New England and New York in their own native and choicest

varieties. All the fruits, and nearly everywhere, grow well in Virginia, and there are very many instances of reasonable fortunes made in fruit-growing. The vineyards and wines of Piedmont, and especially of Albemarle, have become a great industry with a national reputation, and the display of several of the counties at the Exposition, of grapes and choice home-made wines satisfied visitors from other States that Virginia can profitably grow grapes for the table and the wine-cellars.

GRAPES.

Extract from Mr. Lyman's address:

"Our grape list includes every variety. Our crops this year, owing to treatment, have been very much increased, and the condition of our foliage and canes is fruitful of promise for the succeeding year.

"Our growers have not been without some benefit, as the result of the mildew and black rot, in that they have been forced to recognize the individual merit of certain varieties, such as Norton's Virginia, Toes, Delaware, Etta and others, but not to expect crops from most of the endless list, except as the result of eternal vigilance. *Vinifera* and its hybrids afford but little satisfaction to the grower for profit, though the amateur by treatment, extra culture and bagging, may obtain satisfactory results for his trouble.

"The enormous value of the table and wine grapes of the Piedmont section of Virginia is already sufficiently known to pomologists composing the membership of this society. Some four years ago the effects of mildew and black rot reduced the value of our vineyards some 75 per cent., but the use of fungicides has gone very far towards restoring the industry to its normal condition, and the spring of 1891 found our vineyardists again increasing their plantings, and I consider that we are now fairly under way for the establishment of an industry which shall command the attention of the grape and wine-consuming people of the world.

"The experiments with *vitis vinifera*, conducted by Jefferson, were probably the first of any consequence undertaken in this country, and, although they were a failure, yet that and other subsequent experiments have brought about the growth of this variety upon American resistant stocks for all localities like those of Florida and California, where they seem to thrive.

"I do not doubt the ability of any other locality in this country, provided the extremes of temperature are somewhat in accord with those of the natural habitat of the crop attempted to be produced, with the use of the fungicide and the resistant root stock, to successfully grow this variety.

"It is a well-known fact that in 1878, at the World's Exhibition, held in Paris, Virginia wine (the product of the vines of my county) was the only American wine deemed worthy by competent judges—and there is no doubt that French judges are the most competent in the world—to receive a silver medal and diploma in competition with the world, and over all American wines, California included. Again, at the World's Exposition, held in Paris in 1889, the Monticello Wine Company, of Charlottesville, received a silver medal, and for a dozen bottles of Norton's Virginia, but one year old and labelled as such, received a bronze medal and diploma."

The Commissioner of Agriculture, in his report for 1891, speaking of the exhibit before the American Pomological Association, says: The exhibit of Virginia fruit, while not as extensive in variety and select in specimens as is now

known might have been secured if greater interest could have been excited among the people, was such as had not before been shown. The exhibit attracted the marked attention of fruit-growers of every section of the Union to our fruit localities, our advantages of climate, etc., not before shown, and ended in securing for the State Board of Agriculture the Marshal P. Wilder silver medal for the finest exhibit of fruits; and for special exhibitors from our State, four bronze medals, and three special commendations by name. And in his report for 1892, says: The fruit crop, except in a very few counties, and with the exception of grapes, is very short. Very curiously, there is a large crop of fruit in a few Appalachian counties. There is a decided improvement in the cultivation and handling of fruit. This department and the experiment station at Blacksburg have done much to make fruit more profitable and a more reliable crop. Wine-making is an assured success in Virginia, and the grape has become a staple crop. The Commissioner of Agriculture saw seventeen wagons heavily loaded with grapes sold at three and one-half cents per pound, waiting to be unloaded at the Monticello Wine Company's cellar at 4 o'clock in the evening, after 9,000 gallons of pomice had been put into the vats from grapes received that day. That company made this year 68,000 gallons of pure wine. This alone settles the point of its being an assured industry, independent of the fact that all our local fairs show the manufacture of superior pure Virginia wine from their several localities and in very considerable quantities. In this respect, as in many others, the superiority of Virginia's productions and her wonderful resources are surely but slowly being made known.

The census report for 1890 on agriculture will show the following production of grapes and wine in the following States:

STATES.	Area in bearing vines.	Area in non-bearing vines.	Average yield of grapes per acre.	Market value of grapes per ton.	Grapes sold for table use.	Grapes sold to wine-ries.	Wine made.	Market value of wine per gallon.	Total value of plant, including land.	Total laborers employed (all kinds).
Georgia.	1,938	2,154	1.33	96.00	1,938	646	107,666	1.15	1,227,600	2,046
North Carolina . . .	4,000	1,200	1.75	60.00	4,667	2,333	388,833	1.00	1,560,000	2,600
Tennessee.	1,500	600	2.50	89.00	2,500	1,250	208,333	1.00	630,000	1,050
Virginia	4,100	1,600	2.00	60.00	5,434	2,766	461,000	1.00	1,710,000	2,850

VEGETABLE PRODUCTIONS.

The Flora of Virginia is rich and abundant. Cereals, grasses and other plants that have been introduced have found favorable soil and climate. Here grow and yield abundantly "plants good for food" and suited for needed manufactures. A comparison of the production of cereals with the products of other countries presents Virginia in a most favorable light, while nearness to market gives a most decided advantage. The climate and soil of Virginia favor the growth of nearly all the useful and profitable productions of the world. Wheat, corn, rye, buckwheat and Indian corn are raised in abundance. It is the native home of tobacco, and from it planters, manufacturers and the general government realize large sums of money.

Cotton is grown in the southern section, and in all parts of the State cultivated grasses are successfully grown, and in some parts of the State the native grasses make the best grazing. Commodore Maury (good authority) says: "Everything which can be cultivated in France, Germany, or England, may be grown here equally as well, with other things besides, such as Indian corn, cotton, tobacco, peanuts, broom corn, and sweet potatoes, etc., which are not known as staples there. The climate and soil of Virginia are favorable to the cultivation of the grape and the manufacture of wine, as they are in France and Germany." The *National Republican*, describing Virginia, said:

"THE SOIL OF VIRGINIA

Is as varied as the colors in a crazy quilt. Parts of it produce wheat equal to Dakota, corn equal to Illinois, potatoes equal to New York, cotton equal to Georgia, while the tobacco is the best made."

North Dakota reports for 1891: Wheat for all counties average 16 bushels, highest 27; 1892, average 12, highest 19. Virginia has less average, but goes greatly beyond in the number highest raised.

The crops of 1859 (census for 1860), deducting for counties now in West Virginia, were: Of wheat, 10,848,400 bushels; of rye, 670,052 bushels; of Indian corn, 30,361,352 bushels; of buckwheat, 135,549 bushels; of oats, 8,537,630 bushels; of hay, 285,997 tons; of cotton, 5,054,800 pounds—of which Tidewater produced 4,104,800 pounds; of tobacco, 121,787,846 pounds (about one-third of the crop of the United States); Irish potatoes, 1,542,892 bushels; sweet potatoes, 1,892,776 bushels; peas and beans, 482,836 bushels.

WHEAT

Has not been much cultivated as a market crop. In late years northern men who have settled here have made it a regular crop, and, with lands which they have improved, some of them have told us their crops would run from fifteen to thirty bushels to the acre. We confidently believe that most of our soils,

with proper care, would produce wheat and other grain crops abundantly. The success which has attended its cultivation by our northern settlers has stimulated others to cultivate it, and they have been quite successful.

The above is from the hand-book of 1879, in which year the wheat crop in Augusta county exceeded all other counties in the State, as reported by the census of 1880. Agriculture has improved. The following is from the hand-book (Virginia as she is) of 1889:

Here are reported from three counties—one the magnificent limestone county of Augusta—first, 24 bushels to the acre; second, 27 bushels; and third, 38 bushels to the acre. Albemarle and Amherst, Piedmont counties, with red-clay granitoid lands, come to the front. Albemarle, 41 bushels per acre; Amherst, one 25 bushels, 10 pounds to one sowed, the other 40 bushels to one sowed. If they sowed $1\frac{1}{2}$ bushels to the acre, which is probable, the yield per acre for the first would be $37\frac{1}{4}$ bushels per acre and the other 60 bushels. There have been many years in which in the past the yield was as great as those now reported. We recall a crop in Nelson county, on South Rockfish, of 40 bushels; one in Bedford, of 42; one in Campbell, of 35 bushels per acre.

Colonel Knight made in Nottoway county 675 bushels from $7\frac{1}{2}$ bushels broadcast, following tobacco, on good land, or 45 bushels to the acre. This was in 1842.—*Southern Planter*.

In the same year the Commissioner of Agriculture desired to obtain from reliable men accurate statements of the largest known product, per acre, of different crops in the counties of the State. This was designed to show those unacquainted with the soil in its best condition what our exhausted lands had been and what they could be made. He, therefore, made the inquiry of a number of gentlemen in every county. His last report has a crop table, showing that there had been in three counties a yield of 50 bushels of wheat per acre; in six counties, 40 bushels; in one county, 45, and in four, 25 bushels; their estimates were for crops, fields large or small. In Middle Virginia, five counties report from 40 to 45 bushels per acre; three from 25 to 38, and four over 20 bushels. In Piedmont, one over 40 bushels; four over 30 bushels, and three over 20 bushels. In the Valley, five counties from 40 to 43 bushels, and nine counties from 30 to 38 bushels. In the Blue Ridge, which has but three counties, one reports 47 bushels and another 35. In Appalachia, seven counties report 20 to 25 bushels, and one county 34 bushels. 1891 and 1892 were both fine wheat years—average above 100 both years.

CORN

Is one of the staple crops for home consumption, every farmer seeking to make enough for his own use and to feed his stock. Corn fodder is one of the chief forage crops, many preferring it to the best timothy hay. We doubt its economy. Lands which have been well cultivated and cared for will produce 40 to 60 bushels to the acre, and in some exceptional cases more than this.

From reports on corn, similar to the above on wheat, the greatest field yield of corn was ascertained to be in—

Tidewater: One county, 112 bushels; two counties, 100, and many from 50 to 90.

Middle Virginia: One county, 140 bushels; two counties, 100, and many from 40 to 75.

Piedmont Virginia: One county, 75 bushels; one county, 65, and many from 30 to 60.

Blue Ridge: One county, 87 bushels; one county, 80. The other no report.

The Valley: Three counties, 100 bushels; one county, 85, and many from 50 to 80.

Appalachia: One county, 105 bushels; one county, 100, and many from 50 to 80.

Under an improved movement Tidewater produces much corn and fodder as a bi-product. The following is reliable:

Mr. S. B. Carney, of Norfolk county, sent up a sample of corn for exhibition at the Richmond Exposition that is worthy of notice. It is corn grown as a *third* crop on the same land inside of twelve months.

The first crop was kale, sowed in September, 1887; sold in February and March, 1888; yield, 200 barrels per acre; sold for \$1.25 per barrel.

The second crop was Irish potatoes, planted in March and dug in June; 75 barrels per acre; sold at \$3 per barrel.

The third crop was the corn above noted, planted June 20th, and will yield 25 to 30 bushels of shelled corn per acre.

The year 1891 was a fine corn year, and although there was drought in 1892, in many neighborhoods and counties there is an average crop of corn.

The acreage of corn in Virginia has been much increased to make ensilage, which is becoming a common cattle food everywhere. By the census of 1880, Loudoun county, with a fine crop, headed the list of counties in the production of corn.

OATS

Is a staple product for forage, generally sown without fertilizing, and fed in the sheaf, making from 2,000 pounds to 5,000 to the acre.

Formerly very little care was given to the oat crop. It was merely shovelled or harrowed in on corn-stalk fields or, as in the earlier times, sown upon fresh land. Notwithstanding this careless cultivation, good crops were made.

The almost invariable plan was to sow in the spring, often in February. It has been found by experience that winter oats sowed in the fall do best in most sections, especially in Tidewater and Middle Virginia, where this is the only way to secure a good crop. Spring oats still do fairly well in Piedmont Virginia, in the Valley, and Appalachia. In mountain districts, where the land is very light and spews up from frost and cold, no other kind can be used with good results.

The oat crop of 1890 was not good, the spring oats being a failure; 1891 was a good crop, winter oats being mainly sowed in the spring as well as fall; 1892 was a very large crop, many fields running over fifty bushels per acre.

Statistics showing the greatest authentic yield up to 1889:

In Tidewater, 3 counties report 50 bushels, 4 over 40 bushels per acre.

In Middle Virginia, 1 county reports 80 bushels, 5 from 38 to 50 bushels per acre.

In Piedmont, 1 county reports 60 bushels, 6 from 35 to 50 bushels per acre.

In Blue Ridge, 1 county reports 50 bushels, 1 over 40 bushels per acre.

In the Valley, 4 counties report 75 bushels, 4 over 60 bushels per acre.

In Appalachia, 1 county reports 50 bushels, 2 over 40 bushels per acre.

In many sections of the State the oat crop is advantageously and economically used with which to seed clover and grass. This is particularly so in the

mountain sections, where the lands are full of the vegetable matter and are thrown up by the freezes in winter, admirably preparing their grounds for seeding in the early spring. By the census of 1880 Pittsylvania made the largest oat crop.

RYE

Has long been valuable for its grain in the plateaus and small valleys of the Blue Ridge and Alleghany chains. With convenience to market the straw for horse-collars is more valuable than hay, besides the fact that as forage it is the most valuable grain straw. The using of rye for soiling in Tidewater, and near the cities and towns for dairies, has increased its production in the State, and it has been further utilized in the cattle and sheep districts for winter grazing. In most parts of Eastern Virginia, for soiling, it may be sown any time between August and April, and will yield a good green crop.

Of the counties reporting in 1888, the following number in the different sections reported a fair crop: In Tidewater, 5 out of 30; Middle Virginia, 6 out of 25; Piedmont, 8 out of 14; Blue Ridge, 2 out of 3; Valley, 6 out of 15; Appalachia, 9 out of 13. It is thus shown that rye is a natural crop of the mountain districts, where very little seed is required in early sowing and the yield per bushel sown very large.

Carroll county, by the census of 1880, produced more rye than any other county.

BUCKWHEAT

Can be produced in nearly all the Virginia counties, but its natural home appears to be on the high plateaus of the mountain counties. The largest yields and best quality come from all of Appalachia and the Blue Ridge sections and from the mountainous parts of Piedmont and the Valley and the northern counties of Middle Virginia. It is valuable for bees and for green fallowing anywhere in the State, but in many mountain counties is a most profitable grain crop. Floyd county headed the list of buckwheat counties by the census of 1880.

Barley is only cultivated to a limited extent, though it always does well, and it could be most advantageously grown for exportation, since the climate would give it generally the quality it has only in occasional seasons in England, when it bears a high price.

Northern settlers since the war have succeeded with barley in sections not regarded best suited to its production. Its powerful beard renders it objectionable to our mountain people, who prefer rye, oats and buckwheat. There are many localities in the State where very large and certain crops of barley could be produced. The census of 1880 holds Rockingham county highest in production of barley.

PEAS—COW-PEAS—BLACK-EYED PEAS.

Atkinson said: "If cotton was king, the cow-pea was queen." It is passing strange that large areas are not devoted to this crop, improving, as it does, any land on which it grows—yielding a remunerative market crop of seed, valuable food for man and beast, and a fair crop of nutritious forage. In Middle and Tidewater Virginia, with the same preparation, it will yield more bushels per acre, which will sell for more per bushel than wheat, and it can be harvested at as little labor and cost. It has been practically tested that peas sown,

allowed to stand until part of the pods ripen, then cut and put into the barn, will furnish as good food for horses, mules, or oxen, as corn and fodder, and the land from which this crop is cut will produce as good a crop of wheat or corn as it would have done if no crop had been cultivated on the land; frequently much better. The crop of peas made in Virginia does not supply the demand. The price is always high compared with wheat and corn. Tidewater and the Southside appear to be the home of this valuable plant. Nansemond county, by the census of 1880, produced the largest quantity of peas.

Beans are not cultivated in Virginia to the extent they should be, when account is taken of the large areas so admirably adapted to their cultivation, so much more so than to the production of corn, that requires a strong soil, which it rapidly exhausts. Only in Tidewater and parts of Middle Virginia are beans a farm product.

The use of various beans in their dry state as food has been, since the war, much extended. In addition to the navy bean, the valued dish of New England, the various pole beans, kidney beans, lima and butter beans, in fact, all beans, sell well in the markets, with a growing demand. The white varieties all sell high. With proper cultivation and attention no country can excel certain portions of Virginia in the production of beans. Franklin county, in 1880, stood at the head of the list in the production of beans.

POTATOES.

Irish potatoes are a staple crop, being much prized for superior quality, and because of the demand for them in the early markets. Except in Tidewater and in gardens near cities the early varieties are only raised for home consumption. In the mountains, where large crops of fine quality are easily raised, the potatoes are considered very valuable. The following reliable statement will show something of the crop of early potatoes in Tidewater, and is not an uncommon instance in the trucking districts. Mr. G. W. Wilson writes: Last year I had twelve acres in potatoes. I dug eighty barrels to the acre, which netted me one dollar per barrel. I then put the same tract of land (twelve acres) into kale. The second crop of potatoes came up in the kale (from seed left in the ground when first crop was dug). I let the kale and potatoes both grow together. In the fall I dug up one hundred barrels of these potatoes and sold the kale from the twelve acres for \$1,500, making net returns something over \$2,400 from the twelve acres of land in one year.

A Norfolk correspondent says: The Irish potato crop probably gives the largest yield, and many of our enterprising truckers have secured large fortunes from their potato crops. During the past season, which was a good one, it is stated on good authority that several of our farmers cleared from ten thousand to thirty thousand dollars on potatoes. The immensity of this traffic may in a measure be realized in the fact that as many as twenty thousand barrels of potatoes have been shipped from Norfolk by the Old Dominion Line to New York in one day, besides the large amount which was carried to other markets by other lines.

The large quantities of early potatoes shipped to the northern markets should not convey the idea that only early potatoes are raised here, or that winter potatoes are not raised in perfection in the State. From the sea to the mountains the Irish potato is raised and considered valuable for food.

In the rich coves and valleys, "the hollows" of the mountains—in Piedmont, the Blue Ridge, the Valley and Appalachia, can be found any year quantities of as large, smooth and solid potatoes as are raised in Maine and Michigan.

In Tidewater the second crop potatoes are raised for seed, and are in great demand, because it has been found that potatoes left in the ground or planted after being dug produce much better seed potatoes than are produced for the same purpose farther north, and the demand for them is yearly increasing. By the census of 1880, Norfolk county headed the list for the production of potatoes.

Good sweet potatoes can be raised on favorable exposures anywhere in the State, and there are few places where they are not raised for home use. Tidewater and the southern counties of Middle Virginia seem especially adapted to sweet potato culture. Two of the best varieties known in the market have taken the name of the counties where they are supposed to have originated, and where for more than a century the sweet potato has been a great crop. These counties are Hanover and Nansemond. Science is coming to the aid of planters, and improved methods of cultivation, preserving and marketing the potato crop, promise greatly to increase the planting and production of this delicious esculent. In the section above referred to 450 bushels per acre is the highest authentic record by a few counties; 300 and upward was the yield in many more. Accomac led the counties in sweet potato production in 1880.

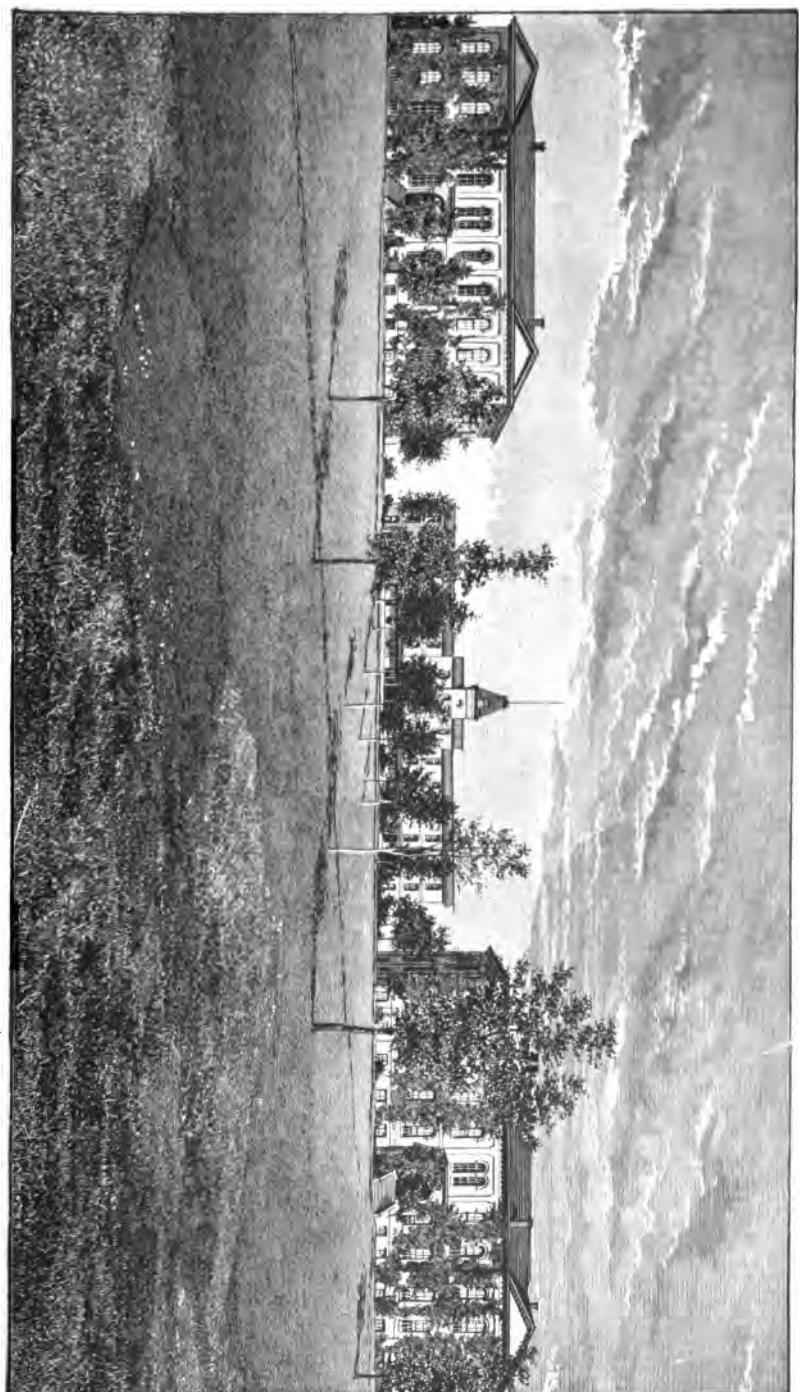
The peanut is extensively cultivated in Tidewater. Isle of Wight, Surry, and Sussex are very notable counties for the production of peanuts. Sandy and light soil are best suited to their growth. This crop could be raised as profitably as many other crops that are cultivated. Taking the forage into consideration, and the fact that it does not exhaust the land, and is a good preparation for grain and grass, it would seem to be a desirable crop for at least forty counties in the State. The production of peanuts has declined in Virginia, owing, it is said, to low prices. The forage which might be procured from this crop is most valuable, for it is surprising the avidity with which cattle eat the vines. Authentic statistics give the highest yield in the best counties at 150 bushels per acre, and all the way down to fifty bushels.

COTTON.

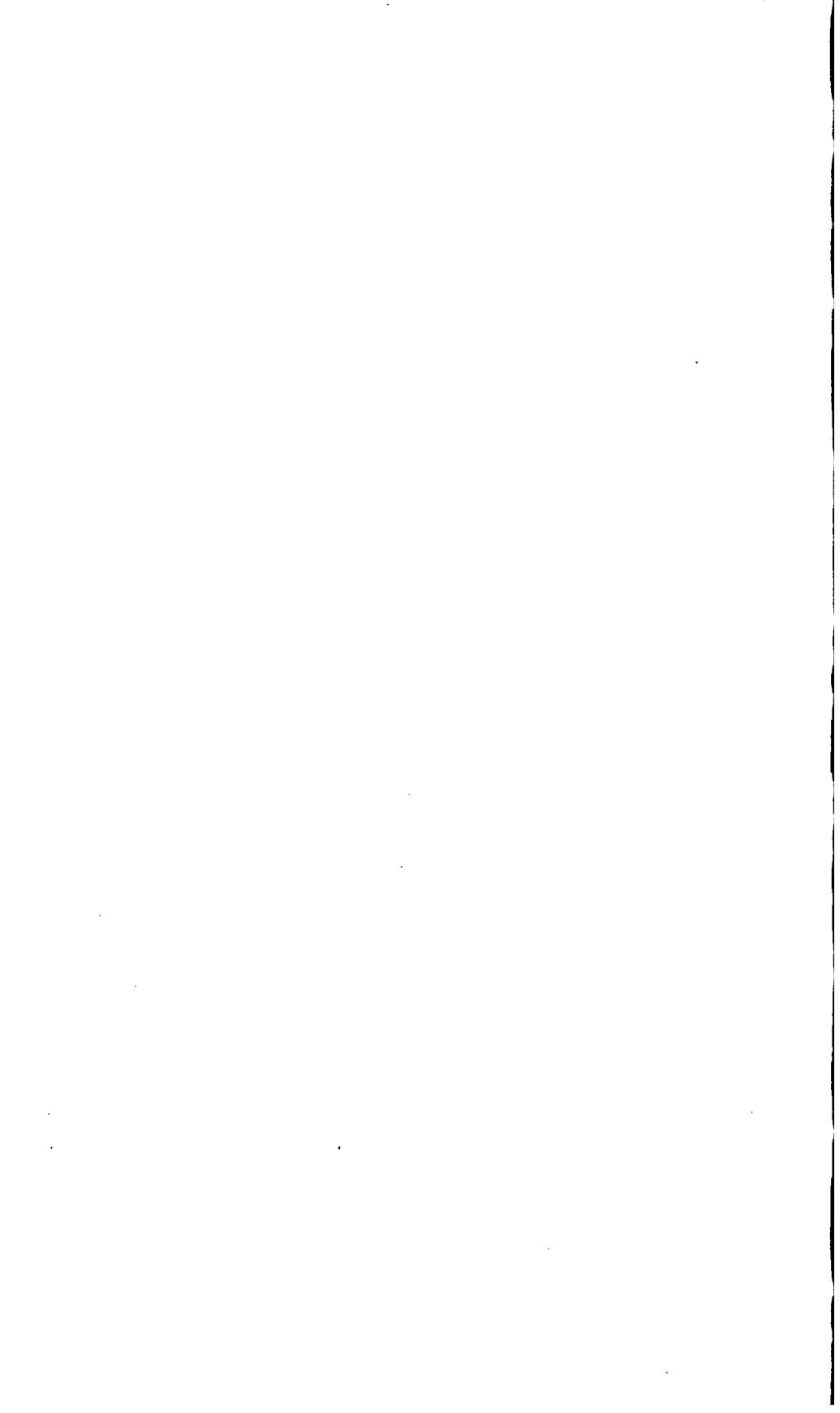
Cotton is grown in the southeastern counties of the State, between James River and the North Carolina line. The State ranks twelfth in cotton production, the census of 1880 showing an annual product of 19,595 bales.

In 1880, Southampton headed the list of cotton counties, and still does so. Cotton is not "king" in Virginia; but cotton, as large in plant and as productive in lint as that of Middle North Carolina and Upper South Carolina, can be produced in twenty-five counties of the State. This has been demonstrated. In the earlier days of the country, it was considered profitable to raise cotton for family use in fifty counties. Taking into consideration the value of the meal and hull as food for stock, the market value of the same, that the lint and oil take nothing from the essentials of fertility in the soil, and that it is a better preparation for grain and grass than corn, farmers and planters in counties adapted to its growth can, as a diversification, greatly increase the product of cotton in the State.

Cotton, this year, was cultivated in eight counties only. One of these (Southampton) exhibited at the State Exposition, in Richmond, lint and seed



VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE.
Blacksburg, Va.



cotton in the boll, which was pronounced equal to the very best upland cotton. Nine counties, in 1888, report the average yield per acre, 700 to 800 pounds; the authentic highest yield being 2,300 pounds seed cotton.

TOBACCO.

Tobacco is a staple product of Virginia. "The Virginia Leaf" is known the world over for its excellence—the result of manipulation as well as soil and climate. Piedmont and Middle Virginia lands are best for the growth of good tobacco; those of Middle Virginia produce the finest tobacco and most valuable; Tidewater is the region of Cuba and Latakia varieties, while immense crops of coarse, heavy tobacco are raised in the upper counties on the rich lands of the Blue Ridge, the Valley and Appalachia.

Maj. Jed. Hotchkiss and Professor Fontaine have spoken of the Mesozoic areas as "islands in the Archain region of Middle and Piedmont Virginia." They say: "It is their value in an agricultural point of view that we would speak of more particularly here—of their fitness for the production of choice tobacco. Much has been said of the unprofitableness of tobacco, of the sure and rapid impoverishment of the land upon which it is grown. That it has tended to this result is undeniable; but that this result is a necessary consequence of tobacco raising is not true. Even in Virginia, where the system has been the very worst, instances can be shown of steady improvement of farms on which large crops of tobacco are grown; and in the Northern States whole communities can be pointed to as evidence that tobacco does not impoverish—necessarily exhaust the fertility of the country. There is, perhaps, no part of the United States more prosperous than Lancaster county, Pa., the largest tobacco growing county in the Union. Land there sells at prices almost fabulous whenever by chance it is put upon the market. Other instances might be cited to prove the same. Connecticut, New York, Wisconsin—these are prosperous because they believe in high farming—in getting large returns from land, both in quality and quantity."

This digression is to the point, in calling attention again to the important fact that these islands just described—these large areas scattered through Virginia—are the same character of soil with the great county of Lancaster; that the climate is as good for tobacco growing, and that the land can be bought for a tenth—nay, a twentieth—of the price.

Middle Virginia, the Southside counties, with some of the Northern, constitute the famous tobacco region of Virginia, and raise more than fifty millions annually of tobacco. The Southside has the advantage of later Autumns, giving more time for tobacco to mature—a very important thing.

Through Middle Virginia are sections of land known by geologists as the *triassic* and *jurassic* formations, which from the production of cigar tobacco in other States in similar land, and some experiments, are believed to be peculiarly adapted to cigar tobacco. These sections of land are found in Pittsylvania, upper part of Halifax, a small portion of Prince Edward, Chesterfield and Henrico (the coal region), a small portion of Hanover, Orange, Culpeper, Fauquier, Prince William, Fairfax and Loudoun, the larger portion being found in the last-named five counties.

In Piedmont Virginia for the ten years, 1870-'80, tobacco culture has increased from 9,970,580 pounds to 21,512,805 pounds. Its main production, however, is confined to the counties of Greene, Orange, Albemarle, Nelson, Amherst, Bedford, Franklin, Henry and Patrick—Bedford, Amherst and Franklin being the heaviest producers, and producing dark, rich, heavy grades mainly.

Danville claims to be the largest bright tobacco market in the State.

Lynchburg, Va., has sold nearly 8,000,000 pounds since October 1, 1892. Unfavorable weather has caused receipts to fall off, but the demand is reported active.

Lands that will yield a heavy crop of dark, rich tobacco will produce abundant crops of wheat or corn—thirty to thirty-five bushels of the former or fifty bushels of the latter. A luxuriant crop of clover or other grasses usually follows wheat upon our improved tobacco lands.

Tobacco is cultivated to a very small extent in some of the Tidewater counties. In colonial times it was the staple—not only the money crop, but the currency of the colony; and the reputation of Virginia tobacco was built upon the product of the Tidewater section. The tobacco grown at "Varina," on James River, had an especial reputation, and the name of the place is said to have been given it because the quality of the tobacco there grown resembled that of "Varinas," in Cuba.

There is no doubt that excellent tobacco can be—*has been*—grown in every county in this section; and probably in every one in the State. The prevailing practice, however, seems to indicate that in many localities other crops have been found more profitable—hence the culture of tobacco has been abandoned in county after county, so that there are many persons who have never seen the plant growing.

But now that fashions are changing—new kinds of tobacco in demand, as, for instance, "Sumatra," which is being largely imported for cigar-wrappers—some fine, high-priced variety may be found which will suit this country and be profitable here; and Lower Virginia may regain her reputation for "sweet-scented," or highly-flavored tobacco.

Caroline is one of the Tidewater counties, and the following description of "Caroline Sun-Cured" may connect her with the "Varinas" of the colonies. But for the production of fine *manufacturing chewing tobacco* this county yields the palm to no other locality in Virginia, nor indeed to that of any other State. This particular sweet sun-cured tobacco has been for a long period the product of this county, and it has been during this whole period an acknowledged fact, by connoisseurs, that the best chewing tobacco has been manufactured from Caroline fillers. There is in this article a peculiar flavor and aromatic taste which lovers of the "weed" most delight in; and which, it is stated by competent authority, is not found in samples of similar texture and appearance grown elsewhere.

In the Valley, quite a considerable quantity of tobacco is produced, not on the limestone lands generally, but dark, large tobacco on the bottoms, on the James and other rivers, and "brights." The freestone lands of the mountains—Botetourt, Montgomery, and Washington—are evidence of this. Appalachia produces much tobacco, mainly bright. Giles, Craig, and Tazewell lead in this section.

The Commissioner of Agriculture reports for 1892 that the area of tobacco is about the same as last year, the cultivation a little better, owing to the increased use of improved agricultural implements in some sections. The drought has made a "spotted crop" of our great staple; in some sections, full and very good; in others, short crop. In this, our historical crop, which everybody once cultivated, and which since the war lost its prestige to great extent, there has been a continued improvement. There has been more judgment in

the selection of soils, a reduction of the general area, better fertilization, and more care. Hundreds of planters, native and immigrant, are now making clear money from their tobacco crop. When it is taken into consideration that it is the best crop preparation for wheat, which always yields well after tobacco, and thus wonderfully economizes in the necessary fertilizers for the two crops, it will be seen that it insures profit on both. Virginia tobacco cannot be substituted either by new methods, new varieties, or adulteration ; it will always, in a series of years, maintain its position of superiority in foreign markets. Whenever all restrictions and burdens are removed from tobacco, Virginia's brights, her sweet-filters, and her rich shipping will assert their natural superiority and receive again the chief place in the market. Richmond, Danville, Petersburg, Lynchburg, Farmville, South Boston, Chase City, Clarksville, Bedford City, and Roanoke are good tobacco markets.

THE GRASSES.

Grass is one of the abundant productions of Virginia, much of its territory being inside the limits of "natural grasses," and all of it is adapted to the vigorous growth of the "artificial" or cultivated ones. But the character of its climate does not require a large stowing away of hay ; therefore, it does not "figure" largely in the returns. A reference to the number of cattle in each section of the State makes the quantity of hay produced appear very small in proportion, but it shows that the pastures can be relied on.

The perennial grasses of Piedmont, the Blue Ridge, the Valley and Appalachia, including the noted "blue grass," are famed for their nutritious and fattening qualities, and place these among the most highly favored grazing regions in the world. Nowhere, save on the great plains of Texas and the extreme West, or South America, can cattle be reared and fattened more cheaply than in these sections of Virginia, as has been proven by the investigations of the United States Department of Agriculture. The Valley leads in the production of hay and seeds ; Piedmont follows. The meadows of the low country in Virginia have an advantage in the early "haying" time, and, where not too remote from the great cities, much profit can be gained by being early in market. Tidewater and Middle Virginia have many fine alluvial meadows, and the salt marshes of the former yield fine crops of hay and perpetual pastures.

The crops of clover and grass seeds are unusually large where they are made an object ; the long seasons seem to give a larger yield of good seed. The first crop of clover for the year is generally cut for hay—it has so large a growth ; and seed is taken from the less rank second growth.

Burke's Garden is an elevated mountain basin in Tazewell county, in the very heart of the great Clinch range, contains about 30,000 acres of the most fertile blue-grass land, and is surrounded by high, almost mural, mountain escarpments, all round, except at one point on the north side, where the waters of this singularly beautiful basin break through and form Wolf creek.

To those who would engage in horse, cattle and sheep raising, the short winters, early springs, tight sods, good grasses, cheap lands, fresh running water, which does not have to be kept open by cutting ice in the winter, and nearness to Eastern markets which rule prices, present advantages which cannot be ignored.

Fine crops of hay are made from cultivated grasses in all portions of the State, but the natural meadows are mostly in Piedmont, Blue Ridge, the Valley

and Appalachia. The "Hay Map" of the Statistical Atlas of the United States shades these sections the same as it does most of Pennsylvania, West Virginia, Ohio, Indiana, Illinois, Missouri, etc., and as more productive than most of Tennessee and Kentucky.

In Tidewater Virginia the Bermuda or wiregrass furnishes fine grazing, and, besides the cultivated grasses, the "crap grass," which springs up in the Fall, makes fine crops of good hay.

In 1889, among the many good things sent in for the Richmond Exposition was a sample bale of Norfolk hay grown by Mr. A. H. Lindsey, on his farm near Deep Creek. Mr. Lindsey raises annually about three hundred tons of good timothy hay, and is constantly enlarging his area in hay.

Flax grows well in all portions of Virginia, though little attention is now given to its cultivation. The elevated mountain valleys suit it admirably. In the Blue Ridge division it is a considerable crop.

Hops are only raised for domestic use, except in a few cases. When planted the vines grow luxuriantly and bear well. Large areas of land, similar to the hop lands of Kent, in England, and to those of the State of New York, can be found in Virginia, and hop culture could be advantageously undertaken in many localities, to vary the industrial productions.

Castor beans are raised in considerable quantities, especially on the Eastern Shore of Tidewater.

Ramie and jute, most valuable textile plants, could without doubt be most advantageously and successfully cultivated on the deep and rich second bottoms and reclaimed swamp lands of Tidewater. Ramie is a perennial, and the stalks are cut three or four times in a year. Millions of bales of jute are now annually consumed in the manufacture of paper, gunny-bags, grain sacks, cotton baling, etc.

SORGHUM

Is to some extent still cultivated for the syrup, but not to the extent it was before the war. A considerable quantity of sugar and syrup is derived from the maple in many counties west of the Blue Ridge.

TRUCKS.

Trucks is the expressive if not eupheneous word used to designate all vegetables supposed to belong to the garden, cultivated in fields, and marketed by wholesale and shipment. The counties of Norfolk, Princess Anne, Northampton and Nansemond are the most directly engaged in the production of "trucks" for transportation to distant markets; but there are many others; perhaps every Tidewater county is more or less devoted to this branch of agriculture. In 1888 twenty-one out of thirty Tidewater counties reported "trucking" on the increase —many greatly on the increase. Of the number eight did not report, and of those not reporting the Department of Agriculture secured evidence of increased interest in this branch of business. There was also reported from counties in other sections of the State, around towns and cities, great increase.

In 1891 twenty-five counties reported Irish potatoes as giving the largest gross sale per acre of any crop; eighteen, sweet potatoes. Twenty-one counties reported Irish potatoes giving the greatest net profit; and sixteen, sweet potatoes.

No better idea can be obtained of this agricultural industry than in a document drawn up by "Farmers and Truckers" of Norfolk, in 1889, giving reasons

for the establishment of a sub-experimental station at that point, addressed to the Rector of the Board of Visitors of the Virginia Agricultural and Mechanical College at Blacksburg.

*An extract, bearing on this subject directly, is quoted:

"1st. We desire most respectfully to call your attention to the magnitude of the agricultural interests, lying, for example, within a ten-mile limit of this city. If a circle—the radius of which is ten miles—be drawn around this city, it would include fully *two thousand farmers and truckers* engaged wholly or partially in growing market-garden vegetables for the great Northern and Western markets.

"Within this circle more than *forty thousand acres* are entirely devoted to truck crops, such as kale, cabbage, spinach, peas, beans, radish, lettuce, turnips, beets, onions, melons, potatoes, tomatoes, egg-plants, celery, asparagus, strawberries, and numerous other similar crops, while many thousands of acres within this circle are devoted to the growing of crops of corn, rye, oats, hay, peanuts and sweet potatoes, and other staple annual crops.

"The aggregate sales of the truck crops grown in this circle amount to from \$3,000,000 to \$4,000,000 annually, exclusive of the hay, oat and corn crops, etc., and, in fact, often *exceed* the latter figure, and are *constantly increasing*. The value of these trucking lands exceeds the sum of *eight millions of dollars*. The value of fertilizers used annually is placed at *one million dollars*.

"The value of seeds, implements and farm stock, horses and mules used in this work is fully *two million dollars*.

"In the prosecution of this great work fully *ten thousand* laborers are given steady employment throughout the year, while during the very busy season of April, May and June the number of laborers runs up to *thirty thousand*.

"When we go outside of this circle above mentioned, whose radius is only ten miles, we find all of Eastern or Tidewater Virginia rolling up a grand aggregate of crops, handled principally in this harbor for shipment to the world's best and greatest markets."

Another most reliable authority, of same year, says: "Norfolk may be said to be in the centre of the greatest market garden in the United States. These great truck farms extend over an area of about twenty-five miles in diameter, covering Norfolk county and a part of Princess Anne and Nansemond, and no other section of like proportions can show the amount of truck produced by this or the amount of cash received for the produce. It is a very difficult matter to estimate the money value of this business to Norfolk, as no complete record is kept of the receipts and shipments, and authorities on the subject differ somewhat; however, those who are in the best position to judge estimate that the trucking business of Norfolk amounts to at least \$4,500,000 per annum. It is claimed that the truck and fruit business of Norfolk county alone amounts to \$2,500,000 per annum, or more than the entire iron industry of the State. The heart of the trucking season lasts about six weeks, covering June and a part of May and July. During this period our large transportation lines put on extra steamships, and a daily line is established between Norfolk and all of the Northern markets. From the best information obtainable, we would estimate that the movement of truck during these six weeks averages between 250,000 and 300,000 packages per week, or about 1,700,000 packages during the season. To handle this immense volume of produce, both in gathering and preparing for market and in its transportation, a very large number of people are required, a large proportion of whom have to be drawn from other parts of the country.

"The Irish potato crop probably gives the largest yield, and many of our enterprising truckers have secured large fortunes from their potato crops. During the past season, which was a good one, it is stated on good authority that several of our farmers cleared from \$10,000 to \$30,000 on potatoes. The immensity of this traffic may in a measure be realized in the fact that as many as twenty thousand barrels of potatoes have been shipped from Norfolk by the Old Dominion Line to New York in one day, besides the large amount which was carried to other markets by other lines."

The following example of individual success is authentic: "From a plot of ground containing one and one-fourth acres of land I have sold six thousand two hundred and one dollars worth of produce during the five years beginning with 1883 and ending with 1887—that is to say, I have received the above amount from northern markets for produce raised on this one and one-fourth acres of land after freight and commission were deducted.

"1883. Threw up this plat in 40-inch beds, three rows spinach on each bed ten inches apart, and put one row of cabbage in open furrow on side of the bed. I cut 364 barrels spinach and 232 barrels cabbage, which returned me from northern markets \$1,100.

"1884. Spinach sown flat in 10-inch rows made 380 barrels; then put in canteloupes (melons), which turned off 100 barrels. The spinach and melons returned me \$1,000.

"1885. I raised on this same plat 385 barrels spinach and 100 boxes beans, which brought me \$1,200.

"1886. Planted in lettuce 10 to 14 inches, cut 450 barrels, which brought me \$1,000.

"1887. Planted spinach again, which brought me \$1,336. Then set out egg-plant, which crop brought me from Northern markets \$565.

"Thus my sales from this one and one-fourth acres of land in five years' time, after deducting freight and commission, has brought me \$6,201—my best year being 1887, when I received the sum of \$1,901. My books show sales for each year, giving day and date of each shipment, and also giving the price received.

"I make this statement by request of the Board of Supervisors of Norfolk county.
B. F. WILSON."

Portsmouth, the county-seat of Norfolk county, makes this statement of its trucking: "The business is carried on in this neighborhood on a scale so gigantic that our unexcelled transportation accommodations of all kinds have been taxed to their utmost capacity of late years to handle the enormous products of the truck farms which abound in our back country. Indeed, the whole region round about us is little else during the spring months than a vast garden, in which are raised the early vegetable and fruits, for their supply of which the Northern and Western markets depend upon our farmers almost exclusively and are willing to pay high prices. From early in the Spring till late in the Fall a constant succession of crops gives employment to a large force of field hands, and the quantity of garden and orchard produce raised in this vicinity and shipped from this port is enormous, almost beyond credence."

The *Baltimore Sun* gave this account of the great Eastern Shore trucking farms in April, 1889:

"In spite of the many heavy rain-storms in this section the present season, farmers who planted fall and winter crops are succeeding well. Capt. Orris A. Browne, who has charge of Hon. William L. Scott's Hollywood place, near

Cape Charles, the largest truck farm in Virginia, has just finished delivering in Northern markets his winter and spring crops of kale and spinach, aggregating 46,785 barrels. The early crop of cabbage on the same farm, which will be ready for market in two weeks, will probably exceed 20,000 barrels. Crops of peas, strawberries, Irish potatoes, egg-plants, tomatoes, onions, etc., will follow, which, with the crops of corn and oats to be raised for consumption on the place, will make, it is thought, the largest amount of produce ever gathered in one year from one farm in this State."

Every year this great industry is increasing in Virginia. All the railroads are bidding for this freight. Last year the Chesapeake and Ohio started a truck and fruit fast train for the Northwest, which carried Virginia fruit and vegetables from along its line to Northwest markets as far as Chicago, and the Richmond and Danville had similar trains taking up fruits and vegetables along its line from Danville, Lynchburg and Charlottesville to Northern cities.

ANIMALS.

WILD ANIMALS.

When the colonists landed at Jamestown and visited the adjacent Indian settlements they doubtless saw many of the wild animals that are to-day found in Tidewater Virginia. Penetrating farther into the country, crossing mountains and exploring valleys, they doubtless came upon all those more ferocious and larger animals that have ceased to be heard of in Virginia.

The animals that belonged to this latitude were the buffalo, elk, deer, wolf, bear, panther, wildcat, fox, beavers, otters, raccoons, and all the smaller animals that lived in different sections of this "hunter" populated land.

The buffalo, elk, panther, wolf and bear fell back before advancing civilization and retreated with the Indian, perhaps before him. To-day in this broad State only occasional bears and wildcats are seen outside the fastnesses of the Dismal Swamp or the laurel-crowned cliffs and rocky crags of the Appalachian Mountains.

The deer and the fox fell back from broad fields of cultivated land, retiring to the mountains and wooded hills and swamps; but in these later days, when millions of acres of uncultivated land are growing up in pines and other wild growth, they have come again and are plentiful in many counties.

The clearing of the river bottoms and the cultivation of the bottom lands drove the beaver and otter to the sluggish streams of Tidewater. The same cause which has brought back the deer and the fox has also brought the beaver and otter again up into Middle Virginia, and they are now found and caught in counties where for years before the war they were never seen.

The following catalogue embraces all the wild animals at present to be found in the State: Bears, wildcats, red, gray and black foxes, raccoons, opossums, woodchucks, fox, gray, ground and flying squirrels, rats, mice, moles, minks, weasels, skunks, beavers, otters, muskrats, deer and hares.

DOMESTIC ANIMALS.

The domestic animals of Virginia are those only that are common to civilized nations. The horse, ass, the mule; the bovine family, consisting of the bull, cow and ox; sheep and goats, some English rabbits, guinea pigs, cats, dogs. Perhaps all of these came with the English colonists.

Sheep were brought in as early as 1609. General Washington was the patron of sheep, and imported a fine Persian ram, which crossed with the Leicester, also imported, produced the "Arlington sheep"—a sheep of some celebrity, says Dr. Pollard, in his admirable "Sheep Husbandry in Virginia." Dr. Pollard says: "John Randolph, of Roanoke, and John Taylor, of Caroline, were the enemies of the sheep."

The necessity of having wool for family use in anti-bellum days gave sheep husbandry an important place in Virginia. Mutton and lamb came along as a matter of course. We find that Merinos took the lead, followed later by Leicesters, Cotswolds and Southdowns. Of later years Hampshire, Oxfordshire and Shropshire and Horned Dorset have preference. The Valley and Piedmont produce the largest and finest mutton; Tidewater, the earliest spring lambs, and Southside Virginia the largest flocks for wool, offering superior inducements to any State in the Union. Cattle and herds were much later in engaging the attention of the first Virginians.

In 1609 (Smith's History, Volume 2, page 2), there was great suffering and demoralization on the departure of Captain Smith for England, and there is evidence that "hogs, hens, goats, sheep, horse, or what lived," were all devoured. There may have been some animals left at "Comfort" or other places. The 2d August, 1611, Sir Thomas Gates arrived with his vessels, bringing "three hundred men and one hundred kine and other cattele." Captain Smith "gave Powhatan a white dog"; and dogs are mentioned as eating in the fields the "greene corne" with the starving people during the absence of Smith. Captain Smith says that in 1609 he started out to trade, considering the colony then prosperous; he had "six mares and a horse, five or six hundred swine, and many more powltry what was brought or bred."

To most of the old-time Virginians a cow was a cow if she gave milk, and when Mr. Jefferson and others of his day were known to be importing cows at a cost of \$250, not a few wiseacres thought they were "a little off" in their old age. These men in this, as in many other agricultural improvements, were only fifty years ahead of their time, and it has taken nearly fifty more to firmly establish their wisdom in these and other important moves.

Now Virginia has the largest herd of registered pure-blood short-horns (Durham) in the world, and large herds of Devon, Holstein (the Dutch cattle of the Revolutionary period), Jersey, Hereford, Red-polled Ayreshire, and selected dairy herds up to 250 can be found in her different sections.

Southwest Virginia produces the finest beef, and exports large numbers to Europe annually. The superiority of the Valley has long been admitted for heavy, fat beef cattle, and since the war Piedmont Virginia has taken an important place, based upon the former and present success of Loudoun and Fauquier, now in the lead as cattle counties in the State. As a whole the Valley, including the Southwest, is more of a grass section than any other; still some of the Piedmont counties and parts of counties rival its best in grass and cattle.

The number of cattle in the State (including cities) is 840,885. Virginia has been famous for its horses. When the horse first came to Virginia, and who brought him, is not fully authenticated, but as the Virginia colonists were mainly cavaliers, it is probable that fine horses were early in the colony. De Soto brought horses to America before the settlement of Virginia and turned them loose in the Southwest, where they multiplied with the buffalo and Indians, but there is no record of the Indians on the Atlantic having horses. One thing is certain, the finest blooded horses, the swiftest racers, trace their pedigree to the Anglo-Arabian blood, imported into Virginia and propagated in "the race-horse region," the "short grass" of the turfmen. The descendants of the Godolphin-Arabian have been and probably are now scattered all over Middle, Tidewater and Piedmont Virginia. The larger, heavy horse of the Valley came first mainly from Pennsylvania. The running horses

of the United States now trace back through Boston, Timolean, Sir Charles and Sir Archy to Diomede; or through other racers to Priam, Rowton, Trustee and Fylde, imported from the old country. At one time in Virginia horse-breeding, blood and record was everything; now a more utilitarian time has come, and the horse that will produce the greatest profit on his rearing, whether for the turf, the road, the farm, or the team, will be sought for in the section to which the breed is suited. The horses of Virginia of all classes are improving, and money is made by judicious breeding and handling on the ever-increasing stock farms of the State. Pure-blooded horses of every class can now be bought in Virginia—Norman, Percherons, Clydesdale, Hackney, Shires, French Coach, Cleveland bays, Canadians and Shetlands—standard trotters and running horses of all the different and finest blood.

There are sections of the State naturally suited to every different breed. The number of horses and mules in the State, including the cities, is 292,824.

The mountains of Virginia are admirably suited to the raising of goats, and the brush-woods and wire-grass of Tidewater and Middle Virginia offer inducements for this profitable, but neglected, industry. With great advantage and profit goats can be kept with sheep, as in the "bible" days. Angora goats, with high-priced fleece as well as valuable flesh and pelt, thrive in all sections. There are only two thousand and seventy-four in the State—a very large part of them in Tidewater.

"Hog and hominy" appear to have been in Virginia "time whereof the memory of man runneth not to the contrary." Formerly the hog was one of the most profitable domestic animals; reared in the forest on chestnuts and acorns, fattened with only corn to harden the flesh, this valuable staple food cost but little, and the surplus bacon was a cash product at a good price. A change has come, and while hogs are still profitably reared for home supply, the cost is greater, as well as the care and necessary attention. They are still cheaply raised in Tidewater swamps and the mountains. The number in Virginia is 465,750.

There are many fine packs of fox hounds and of blooded setters and pointers, as well as other well-bred dogs, and there are many more that the law will one day dispense with. English rabbits, white and mottled, and guinea pigs are scattered over the State as pets. Cats are abundant and valuable.

REPTILES.

No class of reptiles and "crawling things" is numerous in Virginia. Only two are dangerously poisonous. The rattlesnake, found almost entirely in the mountains of Piedmont and Appalachia and wooded swamps of Tidewater, and the copperhead moccasin, found occasionally in all parts of the State, are poisonous, and their bite sometimes fatal. The other snakes—the king, black, the viper or spread-head moccasin, and water snake—are not poisonous, and the garter and the green-wood snake are harmless, and, in some respects, beneficial. And so also the three kinds of lizards are all harmless. Virginia is exceedingly free from reptile troubles. Death from "snake-bite" is almost unknown.

POULTRY.

The word *poultry*, used to express domestic fowls raised for the table, in Virginia means chickens, ducks, geese, turkeys, peafowls, pigeons, and guineas. The word *chicken* represents anything from an antiquated "rooster" to a dainty, tender "spring chicken" three months old.

The hen has a right to claim to be the most important of the fowl family. This claim is sustained by the fact that chickens of all ages are marketed the year round, and the hen is the great egg-provider of the world. No well-equipped farm-house but has also a well-equipped "hen-house." Previous to 1850 only a few breeds of chickens were known in Virginia. The Dominica and blue hens were seen everywhere, except where the game birds were kept and raised for cock-fighting, which had not then fallen into the disrepute of this day. In 1850 "the chicken fever" struck Virginia and became almost epidemic, notwithstanding the scorn and disgust of those who admired the clean-limbed game chickens and underrated all others. In two or three years Shanghais, Cochin-Chinas, Brahmas, and Chittagongs filled the land with their hoarse crowing and the barn-yards with their feather-footed progeny. These fowls were found to be reasonably healthy, increased very rapidly, had large eggs; and so, in many places, the shrill, defiant voice of the game cock ceased to be heard, and champions of many a hard-fought battle-field retired into obscurity.

Other breeds have been brought in, and the brown, the white leghorns and the Wyandottes, black Spanish, and Dorking breeds, and many cross-breeds have developed in Virginia into large, strong, healthy fowls, giving seemingly an unlimited supply of eggs for home and the market, and chickens in abundance.

In the early days of the State the gray (moldavian) turkey was the turkey of the whole State. It was of medium size, fine flesh, and quite gentle. This breed was distributed over the State. The yellow turkey, about the same size, rich in color, of fine flesh, and less apt to go off with wild flocks, became a favorite, and still is, in some parts of the State. Then came the white Holland turkey, smaller and handsomer, fine flesh, very gentle, but rather delicate. Last, but not least, came the bronze turkey; large, strong, and handsome, reminding one of the description of the "wild turkey in 1610," as *extrem large*, "that have weighed something better than 38 pounds"; "an excellent fowl, and so passing good meat." The bronze breed is believed to be a cross between the common turkey and the wild turkey. Its glossy feathers, shape, swiftness of foot, and strength of wing justify this opinion. It is being introduced in many parts of the State, and forms a most important part of the poultry trade and is very profitable.

No section of any country is better for geese and ducks than Tidewater; but, strange to tell, ducks and geese are as much raised in the mountain districts, and most of the feathers in market come from the Southwest.

The white gander and grey goose still hold their own, although Touloose, China, and Emden, and others have been introduced in some sections.

Flocks of wild geese cross the State, take possession of marshes and rivers. Mongrels of common geese have been raised, but they do not do well. The markets are well supplied with geese, and feathers find ready sale. Ducks are found in almost every section of the State. The Muscovy and common puddle duck are found everywhere. The puddle varieties have been improved by crossing with imported ducks; some distinct varieties have been produced.

The Pekin and Aylesbury ducks are larger than any native duck. They are pure white with yellow feet, very large, and generally fat. The climate is wonderfully adapted to the raising of ducks. They thrive, and our markets are well supplied. The industry is very profitable.

The guinea also comes into our poultry market for flesh and for eggs. The guinea takes care of itself. No house is built for it. They go in flocks, sometimes before hatching season laying hundreds of eggs in one nest. They easily go wild, and are caught with difficulty after once taking to the fields. The flesh is dark, but pleasant to the taste, partaking rather of the flavor of wild game. There are three varieties—dark grey, blue and white, and dotted or barred.

The peafowl is raised in all parts of Virginia, and has been here for more than a century as it is now, a few in every county, and not many in any. They are raised for their tail feathers, which are always in demand. The flesh is good, but seldom used. The peafowl can be scarcely said to form a part of the poultry industry.

Pigeons of every variety are succeeding well. A little care in providing boxes and they might be made quite profitable. The market is furnished with young pigeons (squabs) which bring remunerative prices. More attention is being paid to pigeons, and the Homing pigeon, Rufflers, Tumblers, Fan-tail, and others, bring good prices at any time. Virginia has everything necessary for pigeon-raising. Its climate is well adapted to all kinds of fowls; its soil produces abundantly all they need for food, and all varieties of fowl bring a paying price.

BIRDS.

THE FOREST, FIELD AND RIVER BIRDS.

The birds that fly in the air always command a place in any correct description of a country, whether pleasant to the eye, good for food, delightful to the ear, or merely predators or useful scavengers, homely but necessary. "Birds" are important, and their interests are always to be considered by one who loves his native land. Our forefathers "took account of birds." Commencing with Captain Smith's colony, we find they took note of what they saw, from the dainty, tiny humming-bird, living on "sweets," to the broad-winged, sluggish scavenger-bird, the turkey buzzard.

It is evident that the colonists, sufficiently educated to correctly name the birds they found, confounded some with birds somewhat similar, but not the same, which they had known in England. This remark is applicable to those called "larks" and "woodpeckers," which have been correctly classified by Dr. Rives and others. Comparing the birds of to-day with those described by the various colonial writers, it is clear that few, if any, birds were brought from other countries, and, like many animals and insects, found a habitat and multiplied in this country. The English sparrow is, perhaps, the sole exception. Birds of different kinds have wintered in Virginia from the north and summered here from the south; but even these classes are not numerous, and migrate as they did in the days of Captain Smith. Virginia's birds and people are alike in the particular that they have not changed very decidedly in 250 years.

WILD FOWLS AND BIRDS.

Virginia, from the time of its settlement by the English to the present day, has been the abiding place, we may say "the home," of many birds and wild fowls. Capt. John Smith and others mentioned as noteworthy the number of forest and field birds, and catalogues were made embracing everything that is clothed in feathers and flies through the air, from the tiny humming-bird to the fierce and fearless eagle. Mention is also made of fowls—*wild fowls*—which build their nests upon the ground and rear their young upon the ground, but perch when old enough upon the limbs of trees, and fly if necessary through the air.

Previous to the time of Mr. Jefferson there were as many as seven who attempted to treat of this interesting subject; but since that time nothing of much interest has been written, until Dr. W. C. Rives published "A Catalogue of the Birds of Virginia," a paper prepared by him, which was read before "The Newport Natural History Society," and by that society filed as Document No. 7. From this admirable "paper," published in 1890, is taken much of the interesting information here given to the public. Dr. Rives quotes the following from "Oldmixon in 1708": "There is no country more remarkable for the vari-

ety of its birds than Virginia, where the woods and groves in the Spring, Autumn, Summer and almost all the year are rendered as delightful by the musick of their feathered *quires* as by the coolness of their shades or the fragrance of their flowers."

Capt. John Smith is the first person to mention the *Turckie Buzzard*. The early writers seem especially impressed by "the *mock bird* that counterfeits all other severale bird's cryes and tunes."

Thomas Glover writes "as to the mocking bird, besides his own natural notes, he imitateth all the birds in the woods, from whence he taketh his name; he singeth not only in the day but also at all hours in the night upon the tops of chimneys. He is strangely antick in his flying, sometimes fluttering with his head down and his tail up, at others with his tail down and his head up; being kept tame he is very docible."

The following interesting fragment is taken from a work by Rev. Andrew Barnaby, M. A., Vicar of Greenwich, published in 1778: "I departed from Williamsburg, October 1, 1759, in company with another gentleman, and we travelled that day about forty miles to a plantation in King William county, beautifully situated upon a high hill on the north side of the Pamunkey River. A little below this place stands the Pamunkey Indian town, where at present are a few remains of a large tribe, the rest having dwindled away through disease and intemperance." They live in little wigwams or cabins upon the river, and have a fine tract of land, about 2,000 acres, which they are restrained from alienating by act of Assembly. The night I spent here they went into an adjoining marsh to catch "sorusses," and one of them caught near a hundred dozen.

"The manner of taking these birds is remarkable. The sorus is not known to be in Virginia except for about six weeks from the latter end of September. At that time they are found in marshes in prodigious numbers, feeding upon the wild oats. At first they are exceedingly lean, but in a short time grow so fat they lie upon the reeds, and the Indians go out in canoes and knock them over the head with their paddles. They are rather bigger than a lark, and are delicious eating. During the time of their continuing in season you meet with them on the tables of the planters, breakfast, dinner, and supper."

In this, the year of grace 1892, in the same manner and the same place, the remnant of the Pamunkey tribe—about one hundred persons—catch the sorus and sell them, as they did in the time of Rev. Andrew Barnaby, Vicar of Greenwich, in 1759.

In 1688 was published a most interesting account (written in the quaint old style of our ancestors, and fuller than had up to that time appeared) of the Virginia birds, by the Rev. John Clayton, Vicar of Crofton, who came to Virginia in 1685. He not only wrote of the birds in general, but gave in detail descriptions of about forty species, which are easily identified. The meadow hawk, lark, night hawk, are here to-day, but it is noteworthy to find the snowy owl mentioned—a very rare bird—so far south in these days.

The following extracts will be read with interest:

"There are three sorts of eagles, the largest I take to be that they call the *grey eagle*, being much of the colour of our *kite* or *glead*. The second is the *bald eagle*, for the body and part of the neck being of dark brown; the upper part of the neck and head covered with a white sort of down, whereby it looks very bald, whence it is named. The third, the *black eagle*, resembling most the

English eagle; they build their nests generally on tops of trees, naked of boughs, and nigh the river-side, and the people fell the tree generally when they take the young. They are mostly found sitting on some tall tree, whence they have a prospect up and down the river, as, I suppose, to observe the fishing-hawks, for when they see the fishing-hawk has struck a fish, immediately they take wing, and 'tis sometimes very pleasant to behold the *flight*, for when she sees herself pursued the fishing-hawk will scream, making a terrible noise, till at length she lets fall the *fish* to make her own escape, which the eagle catches before it reaches the earth or water. The eagles kill young lambs and pigs. The fishing-hawk is an absolute species of a kingfisher. . . . It has as large crop as I remember. There is a little kingfisher much the same as ours. . . . There is both a *brown owl* and a *white owl*, much what as large as a goose, which often kills them, hens and poultry, in the night. The white owl is a very delicate bird, all the feathers upon his breast and back being snow white and tipped with a punctual of black. Besides, there is the *barn owl* and the little sort of a *scratches owl*.

"There is a great ravenous bird that feeds on carion, as big and high as an eagle, which they call *turkie bustard*. Its feathers are darkish black; its gills red like the turkey, whence its name. It is nothing the sort of bird with our turkey bustard, but rather the sort of our kites, being carnivorous. The fat dissolved in oil is recommended mightily against old Aches and Sciatica pains.

"There are a great variety and curiosity in the *wood peckers*; there's one as big as our magpie, with black and brown feathers, and a large scarlet tuft on the top of the head. There are four or five sorts of woodpeckers, more variegated with green, yellow, and red heads; others, spotted black and white, most lovely to behold. They have a lark nothing differing from our common lark. They have another bird they call a *lark* that is much larger—as big as a starling; it has a soft note, feeds on the ground, and, as I remember, has a specifical character of a long heel; it has a half-moon of yellow on its breast if it have not a long heel. *Quære*: Whether a species of yellow-hammer? There are wild turkeys extreme large, weighing something better than 38 pound; they have very long legs, and will run prodigiously fast. I remember not that I ever saw one of them on the wing except once. Their feathers are the blackest shining color, that in the sun shines like a dove's neck, very *specious*. There be partridges very much smaller than ours, and resort in covies as ours do; their flesh is very white and much excels ours—in my mind *sed de questibus non est disputandum*.

"There is the strangest story of vast numbers of pigeons that came in a flock, they say from New England and New York and Virginia, and were so prodigious they darkened the sky hours in the place over which they flew, and break massive boughs where they light. Many like things I have had asserted to me by eye-witnesses of credit that was to me without doubt, the relators being very sober persons, and all agreeing in the story. Nothing of the kind ever happened since, nor did I ever see pass ten in a flock together, that I remember; I am not fond of such stories, and had suppressed the relating of them, but I have heard the same from many."

Dr. Rives says: It is surprising that there seems to be no definite mention of the *whippowill* previous to Catesby's work, which was published in 1731.

Space does not admit of further mention of the birds of Virginia, except to give the catalogue, which is published with this imperfect sketch. Much more might be written, but one thing is certain, the birds that filled the woods when

the colonists first came into this beautiful land are here to-day, and the fields and groves and shady woods resound with their tuneful melody, to which may be added the mournful notes of the shy whippowill, which, with its wild, weird cry, has waked the echoes and startled the inmates of happy homes under the light of the moon on many a summer's night.

Dr. W. C. Rives is the accomplished son of one of Virginia's most distinguished public men, and the State is much indebted to him for this interesting addition to our local literature.

CATALOGUE OF BIRDS.

Horned grebe, pied-bill grebe, great northern diver, red-throated diver, razor-bill auk, herring gull, ring-bill gull, laughing gull, Bonaparte's gull, marsh tern, Caspian tern, royal tern, Forster's tern, common tern, roseate tern, least tern, flood gull, black skimmer, Leach's petrel, gannet, double-crested cormorant, white pelican, American brown pelican, American merganser, red-breasted merganser, hooded merganser, mallard, dusky duck, black duck, American widgeon, green-winged teal, blue-winged teal, pintail, sprigtail, wood duck, summer duck, red head, canvasback, scaup duck, lesser scaup duck, lesser blackhead, flock duck, raft duck, American golden-eye, cathead, ruffle-head dipper, butter-ball, American scoter, velvet duck, ruddy duck, snow goose, wild goose, Hutchin's goose, brandt, whistling swan, bittern, great blue heron, American egrett, snowy heron, little blue heron, Wilson's thrush, gray-checked thrush, olive-backed thrush, American robin, blue bird, green heron (fly up the creek), black-crowned night heron, yellow-crowned night heron, sandhill crane, king rail, king sora, clapper rail, Virginia rail, common rail sora, yellow rail, little black rail, purple gallinule, Florida gallinule, American coot crow duck, northern phalarope, European woodcock, Wilson's snipe, red-breasted snipe, red-breasted sandpiper, least sandpiper, semi-palmated sandpiper, western sandpiper, sandwing, great marble godwit, ring-tailed merlin, great yellow-legs, solitary sandpiper, willet, spotted sandpiper, bartramian sandpiper, long-billed curlew, Hudsonian curlew, Eskimo curlew, black-billed plover, American golden plover, kildee, semi-palmated plover, piping plover, billed piping plover, Wilson's plover, stuttering bird, turnstone calicoback, American oyster catcher, partridge, quail, ruffed grouse, pheasant, pinnated grouse, wild turkey, passenger pigeon, dove, turkey buzzard, swallow-tail kite, marsh hawk, sharp-shinned hawk, Cooper's hawk, American gos hawk, red-tailed hawk, hen hawk, red-shouldered hawk, broad-winged hawk, American rough-legged hawk, golden eagle, bald eagle, screech owl, snowy owl, yellow-billed cuckoo, black-billed cuckoo, billed kingfisher, hairy woodpecker, downy woodpecker, red-cockade woodpecker, yellow-billed woodpecker, pileated woodpecker, red-head woodpecker, red-billed woodpecker, golden-wing woodpecker, chuckwills widow, whippowill, night hawk, bull bat, chimney swift, humming-bird, scissors-tailed fly-catcher, kingbird, bee martin, pewee, olive-sided fly-catcher, wood pewee, yellow-billed fly-catcher, arcadian fly-catcher, trail's fly-catcher, horned lark, shore lark, prairie horned lark, blue jay, fish crow, bobolink, cow bird, red-winged blackbird, meadow lark, oriole, orange oriole, Baltimore oriole, rusty blackbird, purple grackle, bronzed grackle, boat-tailed grackle, pink grosbeak, purple finch, American crossbill, white-winged crossbill, yellowbird, pine finch, English sparrow, snow bunting, lapland long-

spur, grass finch, ipswich sparrow, Savanna sparrow, yellow-winged sparrow, Henslow's sparrow, sharp-tailed finch, lark sparrow, seaside finch, white throated sparrow, tree sparrow, field sparrow, snowbird, Caroline junco, song sparrow, Lincoln's sparrow, swamp sparrow, fox-colored sparrow, towhee sparrow, redbird, rose-breasted grosbeak, blue grosbeak, indigo bird; black throated bunting, scarlet tanager, summer redbird, purple martin, cliff swallow, barn swallow, white-billed swallow, bank swallow, rough-winged swallow, cedarbird, logger-head shrike, white rumped shrike, red-eye vireo, Philadelphia vireo, warbling vireo, mountain solitary vireo, white-eyed vireo, black and white creeper, prothonotary warbler, worm-eating warbler, chestnut sided warbler, yellow-rumped warbler, Brewster's warbler, orange-crowned warbler, black-throated warbler, magnolia warbler or black and yellow warbler, blue yellow-backed warbler, Cape May warbler, yellow warbler, black-pole warbler, black-burnian warbler, yellow-throated warbler, black-throated green warbler, water thrush, Gunnel's water thrush, Louisa water thrush, Kentucky warbler, Connecticut warbler, morning warbler, Maryland yellow-throat, yellow-pine creeping warbler, yellow red-pole warbler, prairie warbler, oven bird, yellow-breasted chat, hooded-warbler, Canadian warbler, redstart, titlark, mockingbird, catbird, brown thrush, great Carolina wren, Bunch's wren, house wren, winter wren, long-billed marsh wren, short-billed marsh wren, brown creeper, white-breasted nuthatch, red-breasted nuthatch, brown-headed nuthatch, tufted titmouse, tomtit, chickadee, Carolina chickadee, golden-crowned kinglet, ruby-crowned kinglet, blue-grey gnat-catcher, woodthrush.

INSECTS.

Most of the insects injurious to agriculture found here were brought from other countries. The weevil, Hessian fly, cabbage worm and potato beetle are undoubtedly importations. Insect depredations, while troublesome and injurious, rarely in Virginia assume the serious proportions of the grasshopper, locust, army worm, etc., in other sections. The caterpillar family is the most troublesome, but the Entomological Departments of the Experiment Stations are rapidly controlling these troublesome attendants on cultivated lands. Virginia is freer from predatory insects than most States.

FISH.

Tidewater Virginia has a monopoly of edible shellfish. Oysters, crabs, mussels, and clams all belong to Tidewater. To these may be added terrapin and turtle. The principal fish of Middle Virginia is the red-horse, found mainly, if not exclusively, in the Dan and Staunton rivers.

Piedmont excels in the "speckled beauties," the mountain trout.

The Valley has the black bass, and Appalachia alone has the celebrated New River catfish—or, as it is sometimes called, the "blue cat."

All of Virginia's rivers have at some season of the year an abundance of fish of superior quality.

Improvement, the bane of the hunter and angler, has broken up the fishing shores, where shad and herring were taken at the foot of the Blue Ridge and along other streams in Virginia. Although the fish in Virginia have been much depleted, Tidewater holds its own in that particular, the ocean still continuing to pour its fish into the streams of that section.

The United States Government and the State have succeeded in greatly improving the quality of the fish and also increasing the supply.

Fish-Commissioner Wilkins reports as follows, September 1st, 1892: One thousand six-inch bass were turned down by United States Fish Commission at fork of Cowpasture and Jackson rivers, and 1,000 in Calfpasture at Goshen. On December 12th, 1,500 rainbow trout were received from United States Fish Commission—750 for Dry creek and 750 for Mill creek.

HATCHING.

The operations of the Globe Hatchery, on the east side of the Chesapeake Bay, including the distribution of shad fry, donated by our co-laborers in other States, covered the months of March, April, May, June and July, with the employment of ten men, most of whom were expert spawn-takers.

The ova of Spanish mackerel collected were in number 12,650,000; the ova of trout (gray) and speckled or sea salmon were 500,000; the ova of porgies were in number collected 80,000. All these fry were turned into the Chesapeake Bay near the hatchery, under conditions favorable to their growth and development. Fry shad were distributed as follows: 450,000 in the creeks of the Eastern Shore of Virginia and 350,000 in the tributaries of the Elizabeth and James rivers.

The most successful of our salt-water fisheries are now proving to be those along the Atlantic coast from Cape Henry to North Carolina, a section until the last few years thought to be too liable to visitations of windy weather and rough water to prove financially successful. For the last two years the Chesapeake Bay has been visited by immense schools of bluefish, which appear about the middle of May, and stay, with gradually decreasing numbers, as late as September.

The menhaden fishermen report 1892 a successful year; the product of oil and scrap larger than several years past.

The crab fisheries still continue a fruitful source of revenue to the people in a limited area of the Chesapeake, the pursuit of which, in upper Tangier and Pocomoke Sounds, seems to be equally enjoyed in common by the citizens of both States. The earnings from this source, reckoned on the basis of men employed and capital invested, exceed slightly that derived from oysters, and the business seems to be growing larger and larger every year.

Upwards of a thousand sail-boats, batteaux, and canoes may be counted from a single point when the conditions are favorable for a good catch. The business consists chiefly in scraping or dredging for soft-shell crabs and "peelers" (crabs about to cast their shells), which are packed in boxes and sold to the Northern markets or sold to local dealers. The average price is from one dollar and a half to two dollars a barrel for hard-shell crabs.

Black bass, silver, white and sun perch, southern, white and horned chub, mullet, carp, pike, suckers, flat-back gar, mason, and whitesides and eels can be found of good size in the rivers. Tidewater, independent of the great herring, shad and menhaden fisheries (where 100,000 are caught at a haul) has a fine list of table fish caught and shipped to market the same day—sturgeon, rock, sheepshead, hogfish, trout, mullet, spots, bass, chub, Spanish mackerel, bluefish, cróker, halibut and others.

The fish, like the fruit of Virginia, has the advantage of an earlier opening than the North has for marketing. Oysters are found in all the tributaries of the Chesapeake Bay and along the Atlantic coast, giving to Tidewater an exclusive territory, where this valuable shell-fish grows naturally, and where it can be propagated and reared in almost any desired quantity.

Major Hotchkiss, in his work on Virginia, says that it is estimated that more than 15,000,000 bushels are taken annually from the beds of Tidewater Virginia, valued at from \$12,000,000 to \$15,000,000. In 1869 over 5,000 small boats and 1,000 vessels of over five tons burthen were employed in taking oysters from the water, and 193 State and 309 other vessels, 18,878 tons aggregate burthen, were engaged in carrying them to market. For some years the supply has been growing less and the demand greater. Under the present system of depletion the supply will soon be inadequate to the demand and the prices will be higher. The person who has a well-stocked oyster shore can command ready sale, at good prices. There is no reason why the artificial propagation of oysters should not be conducted on a larger scale. In France there are oyster farms that pay an annual profit of \$500 or \$600 per acre. Virginia's Lynnhaven and Chesapeake stand at the head of the list for market, while others claim equal excellence. Just now there is much discussion about protecting the natural beds, and larger planting, if necessary, for increasing the revenue of the State.

MANUFACTURES AND MINING.

In the amount of capital invested in manufactures, Virginia at the taking of the census in 1880, was surpassed by only two of the Southern States—Maryland and Kentucky. Next to Virginia came Georgia, with \$20,672,410 invested in manufacturing, against \$26,968,990 in the former State. In 1880 Virginia had 5,710 manufacturing establishments, employing 30,184 hands, and producing manufactured products to the extent of \$51,780,992. These figures, however, give but little idea as to the extent of manufactures in this State at present, as the last four years have been very active ones in the building up of the industrial interests of Virginia. In 1880 for instance, Virginia produced only 29,943 tons of pig iron, while in 1884 nearly 153,000 tons were made in that State; in 1880 the cotton mills of the State had 44,000 spindles, while in 1884 they had 66,000. These are but illustrations of the general industrial progress of Virginia, though possibly in other interests the development has been somewhat less rapid. It has lately been stated by a good authority that in one county alone \$5,000,000 had been invested in manufacturing and mining industries during the last ten years, and of this the bulk has been invested since 1880. In the manufacture of tobacco Virginia takes a high rank, the product of her immense tobacco factories being found in nearly if not every civilized country of the world. As in North Carolina, this business is rapidly increasing, and lately a number of important tobacco manufacturing enterprises have been organized in the State. The flour-milling interest is a very large and flourishing one; the excellent quality of Virginia wheat enabling the millers to produce a superior quality of flour in much demand outside of the State, and especially in South America, where very large quantities of Richmond flour are annually consumed.

The manufacture of machinery is probably carried on more extensively in Virginia than in any of the other Southern States, excepting Maryland and possibly Kentucky, though it is impossible to give any statistics on this later than the census reports of 1880, and they are of little value so far as the present industrial position of the Southern States is concerned. At Richmond and Roanoke there are machine shops of enormous size and capacity, equalling in extent and in the character of the work turned out the largest machine shops to be found in the North. These shops not only make the general run of machinery, such as engines, boilers, saw-mills, etc., but they also do a very large amount of railroad work, some of the locomotives manufactured by them being equal to the best made. In nearly all portions of the State manufactures are receiving increased attention, and strong efforts are being made by the press and people to encourage the manufacturing interests.

The present Commissioner of Agriculture in 1888 devoted time and labor to investigations into the manufactures, great and small, of the State. What is

said above is from statistics gathered by the *Manufacturers' Record* and reported by the Norfolk and Western Railroad for distribution, and relate to the period between 1880 and 1889. In the fall of 1888 the Commissioner of Agriculture made the following statement in his annual report:

The mining and manufacturing interests of the State have increased in the number of mines opened and establishments at work, as well as in the number of employees engaged. There has been a wonderful increase in the capital employed in mining and manufacturing in the last ten years, amounting to more than \$40,000,000, as well as gratifying diversification in the industries. Iron and coal have outstripped all other operations, and all the world knows of our rapid and long strides in this direction, but the statistics will show that in zinc, lead, copper, tin, gold, pyrites, sulphur, lime, plaster, salt, barytes, ochre, mica, slate, soapstone, marble, brownstone, granite, manganese, kaolin, earth paints, cement, marls, pipe clay, fire-brick, etc., there is a movement developing these minerals, and that in all of them there are some works which are increasing in magnitude and importance. The various manufactories and industries in timber and woods have increased greatly. While the sawing of common lumber for the markets has not increased in the last two years, it has held its own by change of the location of mills and developing of new timber districts, and there has been an advantageous diversifying in this line. The number of works in the smaller wood industries—staves, keg-timber, spools and whirls, spokes, hubs, handle bolts, baskets, tubs, pails, churns, etc.—has greatly increased. So there is a steady industry in the collection and shipment of furniture and ornamental woods, which has rendered valuable the products of our forests heretofore considered useful only for fuel and too plentiful to be regarded.

Cotton manufacture in Virginia, as well as wool, occupies a fair position and will gradually increase.

Brick-making, as a regular business, is increasing, and most valuable clays for fire brick, stoneware, pottery and terra-cotta work are being developed in the State. Your Commissioner filed with this report a statistical table made from reports of valuable correspondents and observations of his travelling agent that well sustains these views, and shows that while there is room for thousands of new, and very many old industries and rare opportunities for the profitable investment of millions of capital, still we are moving forward in mining and manufacturing at no snail's pace.

In 1889 the Commissioner of Agriculture, keeping up his investigations and giving a list of 134 new industries, says:

"A larger amount of capital has been invested in mining and manufactories in the State in the last year, certainly in the last four years, than before in any equal period.

"While there has not been any large increase in the number of new iron and coal mines, except in the last twelve months, still there has been a steady advance in investments of foreign and State capital in this direction.

"There has been a great increase in the development of zinc mines, a new impetus to mica, manganese, gold, marls, and clays; old works have been reopened and improved and new ones established.

"In addition to the furnaces, mines and manufactories established and at work in the last five years, representing a capital of many millions of dollars, much of which is the money of Virginians, there has been in the last two years an

increase and continuation of the movement to increase mining and manufacturing in Virginia which represents probably more than \$50,000,000 of capital. We give a list of some of these projects for developing the resources of the State, many of which are at work and many completed; others as yet are pushing the development of the property, and some just organized."

The *Manufacturers' Record*, published in Baltimore, which is a trade journal, takes the following view of Virginia's prosperity:

"Every friend of Virginia must rejoice at the remarkable activity which is seen throughout the State in the organization of industrial and railroad enterprises. The foremost men of the country are investing, not simply thousands but millions, in the purchase of timber and mineral lands, in the building of railroads, the founding of new towns, and the establishment of mining and manufacturing enterprises. Such an era of activity the Old Dominion has never seen before, even in its palmiest days of prosperity. The undeveloped wealth that might enrich an empire has commanded the attention of investors and iron and steel makers, and they are pouring their money into the State so rapidly that, unless some unforeseen accident should occur to check this tide of prosperity, Virginia will ere long become one of the wealthiest States in the Union."

The following is from the Commissioner's annual report for 1890:

In this year manufacturing has increased more rapidly than last year, while mining is still maintaining a steady advance. The buildings erected and in course of erection in the State this year for mining and manufacturing are greater in number and value than ever before. This year's operations have done more to ascertain the real value of the minerals of Virginia than those of any previous year. The explorations have been larger, and fuller analyses and assays more in number and more complete, and while some discoveries of minerals have been shown of little value, many more have been found to be of great extent and better quality than was expected. This is especially true of manganese, fire-clay, magnetic iron, marble and slate.

In 1891 the Commissioner made inquiries into the mining industries, particularly to find what was being done in working developed mines. He says:

"The last two years have witnessed the greatest mineral development ever known in Virginia. This development, while in some places it has boomed the price of lots above any value that ought to have attended them, has opened mines of iron, coal, zinc, lead and manganese beyond the expectation of most men in superiority of quality and the extent of the deposits. New minerals, or rather we might say new discoveries, have been made, giving new and greater value to the mineral resources of the State, as well as wonderful wealth to some individuals and companies.

"One tin mine, if not two, in the Blue Ridge chain, is an assured fact, and it is believed will shortly be putting out large quantities of tin.

"The sulphur (pyrite) mines of Louisa, which for some years have been worked and the crude pyrites shipped North, have increased in number, and preparations are being made to establish works for the manufacture of sulphuric acid. This is a most important matter to the State. There has been discovered only one other large and valuable deposit of this rich sulphuret in the South, and this deposit is in the State of Georgia. The increasing demand for sulphuric acid in the manufacture of fertilizers, as well as in the arts, make these mines of great value.

"The raising and shipment of coal from all our mines continues, and new ones are being opened in many sections. The coal discovered some years ago near Farmville, partially developed and then deserted, has again been opened, and at greater depth coal of good quality has been found. It is claimed that it will make coke valuable for smelting iron. This has not been proven, but should it be the fact, first-class coke within thirty miles of the James River mineral belt, with its rich steel ores, would produce a movement of importance in the manufacture of Virginia iron and steel.

"Valuable fire-clay has been discovered, analyzed and tested by fire. Tile and pottery clay, kaolin and pipe clay, etc., have been found, but there is little doing in these lines. Very good porcelain works are at Strasburg; tile, drain and brick works at Chester, in Chesterfield.

"Virginia will one day be found to be immensely rich in clays, which at present attract little attention.

"There have been found, tested and developed, immense deposits of minerals richer than in any other land. The coke from her immense coal fields is higher in fixed carbon and more valuable for smelting than any other, and has been carried hundreds of miles by rail to make cheap iron in other States. Her irons for steel, for cannon, for car-wheels, for stoves, etc., have been given upon test the highest place. Her immense deposits of manganese stand before the world without a rival. Her zinc has long had a reputation based on a large contract with the Italian Government, and both the mines and the smelting are increasing. Her granite was accepted by the Federal Government for building after an official test, and the finest pavements in many cities of our sister States are of her Belgian block. Her large deposits of magnesian lime still furnish the celebrated James River cement.

"Her Buckingham slate stands without a rival in roofing. These all have had official and practical tests.

"Add to these minerals that have been developed and believed to have shown paying quality and quantity the pyrite of Louisa, mica of Amelia, fire-clay and ochre of Chesterfield, gold of the Middle counties, baryta, soapstone, lead, copper, asbestos, plumbago, kaolin, gypsum, salt, lime, marble, lithographic stone, and many others, and Virginia may well be proud of her mineral wealth.

"The mineral report referred to shows that 37 counties of the 65 heard from report the discovery of iron ore of fine quality, 24 counties report the development of the same, and 14 counties report the present working of mines for smelting. Coal has been discovered in 17 counties, developed in 14, and is being mined in 7. Zinc has been discovered in 4 counties, developed in 3, and worked in 3. Manganese has been discovered in 14 counties, developed in 5, and is now being worked in 4. Gold is now worked in four counties, lead in 2 counties, and copper in 2 counties. This report is only from 65 counties, and it is known otherwise in this office that many counties not reporting have valuable mines developed and worked."

Manufacturing in almost every line has steadily increased in this State. There have been times of excitement and times of some depression, but there has been a general increase in manufacturing. In some of the smaller industries this has been marked. Evaporating fruit and canning has received great impetus. There has been an increase in the number of works in iron and wood, wool and cotton. The proof of this general increase can be seen in all our cities and most of our towns and villages. Inquiries from other States, brought on

by advertisements from the Department of Immigration, indicate that manufacturers of experience, but of limited capital, are looking for new locations in all the industries in Virginia. This is especially true of the various manufactories using timber and fruit. There is a great opening in Middle Virginia for the manufacture of our clays. In close proximity to several of our cities are the finest clays for tile, drain-pipe, pottery, porcelain and fire and stove brick. Undoubtedly, Virginia offers the finest field for canning, preserving and evaporating fruits. Blackberries, huckleberries, strawberries, raspberries are in abundance in the old fields, while all the cultivated fruits are generally abundant and cheap. Large capital can be profitably invested in this direction.

Some of the foregoing reports of mining and establishment of manufacturing plants may be attributed to what is known as the "boom." On the whole the boom was a great advantage to the State; indiscreet mariners and small vessels were wrecked, but large movements based on reliable geology and practical mineralogists and miners, and skillful and able men, with abundant capital, nearly all succeeded with reasonably good selections of location, and after the excitement has passed it is found that very many substantial works, improvements and industries connected with all the resources of the State are the result of the extensive advertising and investigation of the active days of 1891, and the Commissioner of Agriculture for 1892 reports, quoting and sustaining his former reports. He says:

"I would simply add that there is now an increasing development in gold, tin, mica, fire-clay, soapstone, and pyrites; while in iron, copper, zinc, lead, manganese, and coal there is the steady continuance of the work. Petroleum, or some napthalous oil, has been discovered east of the Blue Ridge; beyond peradventure in the coal section near Richmond. Many of the minor and scarcer and more valuable minerals and metals have been discovered in developing and mining those well known. The stone of Virginia—granite, soapstone, marble, and sandstone—is being more extensively developed and regularly worked than ever before, and the manufacture of brick in all qualities, tiles, drain-pipes, etc., is becoming a large industry.

Manufactures of wood, iron, and tobacco still hold their prominence, and are followed by numerous smaller manufactures, attracting attention. Manufactures of wool are increasing, and fine woollen goods from Charlottesville, Bedford City, and Buena Vista are well known in the markets of the Union; while many smaller factories are springing up.

Fire-brick for stoves, furnaces, locomotives, etc., equal to the best, from the works in Chesterfield county, at Robiou's and Dorset, and Buena Vista; vitrified paving brick from Smyth; tiles, agricultural and mechanical, from Chester, in Chesterfield, were added to new works at the State Exposition last fall. Marl works in King William and Prince George counties are new works, and brick and clay works started at City Point since the report of the Commissioner. There will never again be a cessation of the mineral and industrial development of the Old Dominion."

TRANSPORTATION.

The business of public carriers in Virginia is done almost wholly by railroads and steamboats. In a very few sections wagons, sail vessels, and batteaux carry freight on regular routes, and stage-coaches are still found for passengers. The day for these conveyances has long since passed, and railroads are fast penetrating every valley in the State; and public vessels are propelled by steam and can be found on all the waters where trade and travel are considerable. The public roads, like the small rivers, have been neglected, and necessity alone compels their use for marketing crops with private teams or boats. Virginia has more steamboat navigation than any of the old States, and three of the great railroad systems of the Union were chartered by the Legislature of the State.

The great trunk lines of the State having lines and systems extending North, South, and West through many States are the Chesapeake and Ohio, the Richmond and Danville, and the Norfolk and Western. The great Atlantic Coast Line makes the connection between New York and Florida through three otherwise independent short line railroad companies. These roads have all done much, independently and in conjunction with smaller companies, to develop the resources of the State, especially its coal, iron, and lumber. A sufficient description of all the railroads and steamboat lines is given by the map accompanying this book (for which it was specially made) to enable any enquirer to choose his route to the different sections of the State.

STEAMBOAT LINES.

The Clyde regular line of steamers plies between Norfolk and Philadelphia every Wednesday and Saturday.

The Baltimore Steam-Packet Bay Line steamers leave Norfolk, Portsmouth, and Old Point daily for Northern cities.

Norfolk and Washington City Company's boats leave Norfolk, Portsmouth, and Old Point daily for Washington city and return.

The Virginia Steamboat Company's steamer Ariel runs between Richmond and Norfolk every other day, touching at all important points on James River.

The steamer McCall runs between Norfolk and Petersburg every other day, touching at the James River landings.

The Roanoke and Cashie River Line plies between Norfolk and Windsor, and landings on the Cashie and Plymouth, and landings on the Roanoke.

The Old Dominion Steamship Company, with a fine line of steamers, runs between Richmond and New York. Steamers leave Norfolk for points on the Chesapeake Bay and important cities on the rivers of Virginia.

The Weeks Steamboat Company runs between Norfolk and Fredericksburg twice a week, touching at all landings on the Rappahannock River.

The Perquimans and Scuppernong River Line leaves Norfolk twice a week for Columbia and all points on the Scuppernong River.

RAILROADS.

The Chesapeake and Ohio Railway Company. Main line, from Fortress Monroe to Alleghany Station, near the West Virginia line, 306 miles. Branch lines: Gordonsville to Washington city, 93½ miles; Richmond to Clifton Forge, 232½ miles; Eagle Rock to New Castle, 26½ miles; Lexington to Balcony Falls, 21 miles; Bremo Bluff to Slate Mines, 20 miles; Mineral City to Pyrite Mines, 4 miles; Covington to Warm Springs, 25 miles; Goshen to Alum Springs, 9 miles.

The Richmond and Danville Railroad Company. Original line—Richmond to Danville—141 miles. Branches and divisions: Danville to Washington city, 239 miles; Richmond to West Point, 39 miles; Manassas to Strasburg, 61 miles; Alexandria to Round Hill, 57 miles; Calverton to Warrenton, 9 miles; Elba to Rocky Mount, 37 miles; Keysville to Clarksville, 31 miles; Sutherlin to Milton, 7 miles.

The Norfolk and Western Railroad. Main line, from Norfolk to Bristol, 408 miles. Branches and divisions: From Roanoke City down the Valley to the West Virginia line, 203 miles; from Pulaski City to Gossan, 45 miles; Reed Island Junction to Betty Baker, 10 miles; from Radford to Pocahontas, 75 miles; Roanoke south to North Carolina line, 75 miles; Bluefield to Norton, 103 miles; Lynchburg south to Wooddale, 78 miles; Glade Spring to Saltville, 8 miles; Petersburg to City Point, 9 miles.

New York, Philadelphia and Norfolk Railroad. A straight line through the counties of Northampton and Accomac from Cape Charles City to the Maryland line, passing north. This road has regular water communication with Old Point, Norfolk and Portsmouth by steamer connections.

Baltimore and Ohio Railroad. This railroad runs in Virginia up the Valley from Summit Station, in Frederick county, to Lexington—126 miles.

Richmond, Fredericksburg and Potomac Railroad. From Richmond to Quantico, 82 miles.

Norfolk and Southern Railroad. From Norfolk to Northwest, about 30 miles, passing the North Carolina line into that State.

The Cumberland Valley and Martinsburg Railroad runs from Winchester north, passing into West Virginia about twelve miles from that city.

The South Atlantic and Ohio Railroad runs from Bristol, on the Tennessee line, to Big Stone Gap, sixty-six miles, and Looney Creek, seventy-one miles.

The Richmond and Petersburg Railroad, from Richmond to Petersburg, is twenty-three miles long.

The Petersburg Railroad, from Petersburg to Weldon, N. C., sixty-one miles—about fifty miles in the State.

Atlantic and Danville Railroad, from Portsmouth to Danville, about 150 miles; branch from Claremont to Emporia, about fifty miles.

Farmville and Powhatan, from Bermuda Hundreds to Farmville, seventy-five miles; lately completed, and opening up new section with large timber and agricultural resources.

Baltimore and Potomac Railroad, from Washington to Quantico, thirty-five miles.

Danville and New River Railroad, from Danville to Stuart, about thirty miles.

Norfolk and Ocean View Railroad, from Norfolk to Ocean View, twelve miles.

Norfolk and Virginia Beach Railroad, from Norfolk to Virginia Beach twenty miles.

Potomac, Fredericksburg and Piedmont Railroad, from Fredericksburg to Orange, about thirty-five miles.

Suffolk and Carolina Railroad, from Suffolk to North Carolina line south.

Suffolk Lumber Company Railroad, from Suffolk to North Carolina line southwest.

Cheap and swift transportation is afforded by electric lines in most of the cities, and Richmond and Petersburg will be connected by an electric line of cars on a line of twenty-two miles.

HISTORICAL.

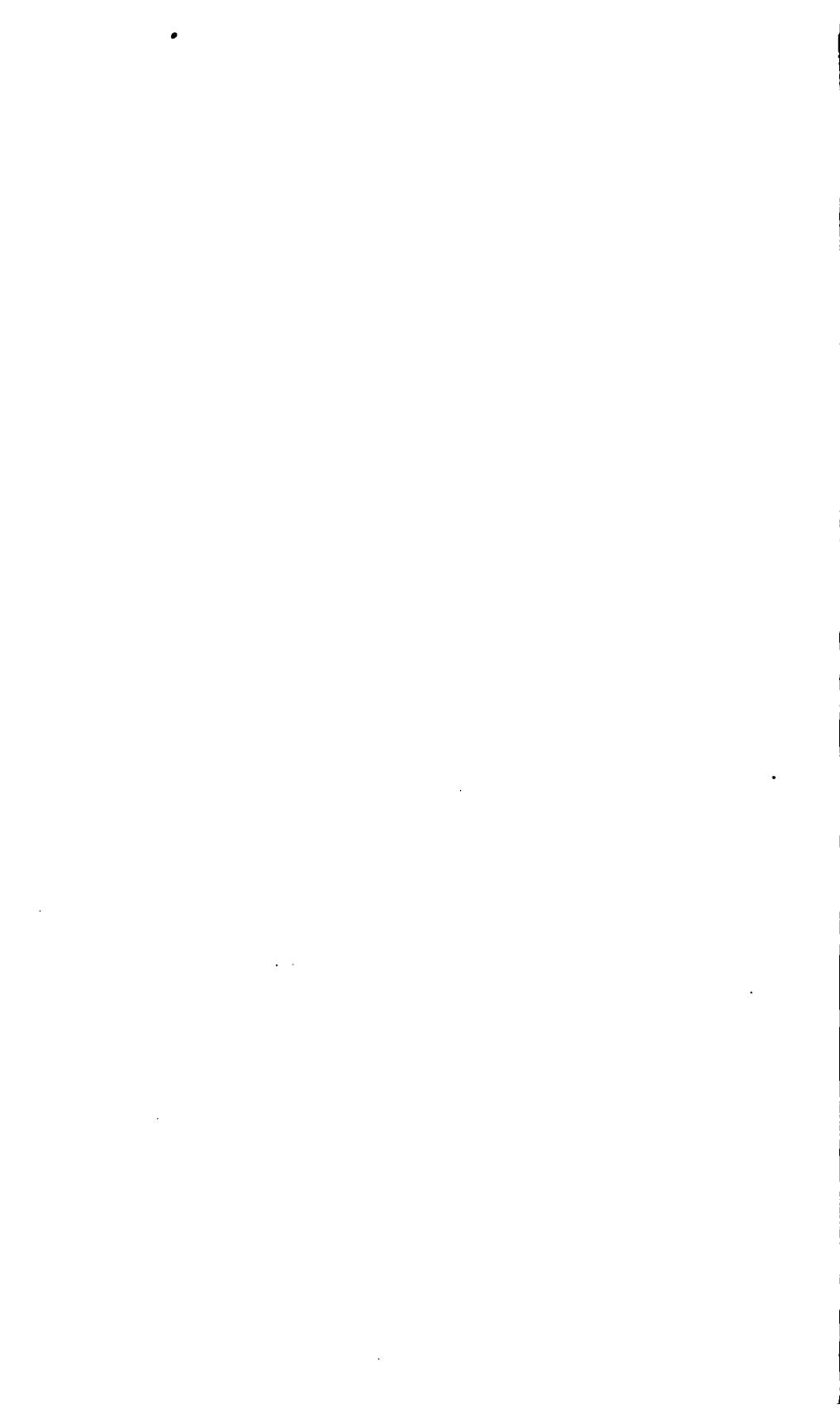
Sir Walter Raleigh, in 1585, in the reign of Queen Elizabeth, sent out an expedition to the New World, which took possession of the Virginia coast, and named the country (including North Carolina) *Virginia*, in honor of the virgin queen. Afterwards all the country from latitude 34° to 45° north was known as Virginia, and was divided into the northern and southern colony. The former was afterwards called New England. In 1606 King James I. made grants to the "London Company." One hundred and five colonists sent out by the London Company founded Jamestown May 13th, 1607, the first permanent settlement made by the English in America. The three ships bringing the colonists were commanded by Christopher Newport. The colony met with reverses and was saved from a disastrous end by Captain John Smith, whose history was very remarkable, and one which has excited considerable discussion of late years—one party being disposed to look upon him as a pretender and not entitled to the praise which has been bestowed upon him, and the other defending his ancient reputation. He will, however, always be regarded as one who has played a bold and important part in the early history of Virginia. In 1609 the London Company was reorganized and received a grant of territory extending 200 miles north, and the same distance south of Old Point Comfort, and westward to the Pacific ocean.

For many years Virginia retained most of this territory, and in 1784 ceded to the "United States" her claims to the lands northwest of Ohio (from which have been carved many of the rich Western States), stipulating that the ceded lands should be erected into republican States, not exceeding certain dimensions, and shortly after this she ceded the territory now forming Kentucky.

Upon the annulling of the charter of the London Company, and its dissolution, July the 15th, 1624, the King henceforth appointed the Governor-in-Chief, who, however, but rarely resided in the colony, his functions there being exercised by a Deputy or Lieutenant Governor. The Resident Council was continued being appointed by the King on the recommendation of the Governor or Lieutenant-Governor. This was the real Colonial Government, and was in existence when it was overthrown by the Revolution, and the last Colonial Governor, Lord Dunmore, driven first from Williamsburg, the capital, and then from the State in June, 1775. On July 17th, a recently dissolved assembly met in convention in Richmond and organized a provisional form of government and plan of defence, with a committee of safety, headed by Edmund Pendleton, with ten distinguished colleagues. Another convention met by appointment May 6th, 1776, at Williamsburg, and on the 29th of June adopted a State constitution, which provided for a Council of State and a Governor to be elected annually by the joint ballot of the Assembly. Virginia at this time furnished for the Council of the nation Thomas Jefferson, who wrote the Declaration of



STATE CAPITOL.
(With Washington Monument in foreground.)
Richmond, Va.



Independence, and Richard Henry Lee, who introduced it in the Continental Congress; Patrick Henry, who roused the people and made an army possible by leading as colonel the First Virginia Regiment; Carter Braxton and Buller Claiborne, who sustained with their individual names its finances; George Washington and Light Horse Harry Lee and Daniel Morgan in the field. In 1781 the term of the Governor was made three years, and Benjamin Harrison was elected, and in that year (19th of October) Cornwallis surrendered at Yorktown, and Virginia received the capitulation of the British army. The war ended, peace was declared, and Virginia gave the United States its first and greatest President, George Washington.

Other prominent Virginians came before the public—James Madison, George Mason, George Wythe, James Monroe and others. Virginia gave the country its fourth President in the person of her distinguished son, James Madison. Her soldiers went to the field in the second war with Great Britain in 1812. Her coasts were ravaged and her sons fell on every field from Canada to the Mississippi, and Harrison in the West and Scott in the North again illustrated Virginia military genius. Peace was declared, and Monroe, another Virginian, who succeeded Madison in the Presidential chair, brought in an era of peace, good will and prosperity that appeared like a millennium.

Till 1844, with the exception of Indian wars of no serious consequence, there was peace in the land. Virginia still furnished public men of such ability and character, representing herself and other States, that she earned the name of "Mother of Presidents," as she had always been of statesmen. Randolph of Roanoke, the Tuckers, Rives, the Tylers, Floyds and, as Kentucky was hers, still more was Clay, "the mill boy of the Slashes," hers. With the hero of Tippecanoe for President, and John Tyler also to fill the chair, she awaited the summons to the fields of Mexico with her volunteers, led by her sons, Scott, Taylor, Garland, Lee, Jackson, Johnston, Early and a host of others, who afterwards carved their names high on the arch of Virginia's fame. Then came an era of peace and prosperity, and up to 1861 Virginia had advanced with rapid strides. In 1849 she called a convention and changed her constitution, codified her laws, extended the right of suffrage, gave to the people the election of nearly all the offices, and her prosperity appeared secure. While for eight or ten years there had been material and financial prosperity, there had been bickerings and sectional legislation. The bone of contention, real or pretended, was slavery; party spirit ran high; compromises were exhausted, and civil war ensued. Virginia, always conservative, stood between the South and the North, asking both sides to heed her voice and abstain from violence. The South wanted her for an ally; the North wanted her to remain neutral. The fatal gun was fired. South Carolina, a little sister, was attacked. Virginia took her place with the South, and called her sons from every land; with perhaps a few exceptions they came, and the record they made is known to the whole world. Upon her battle-fields they stood, they fought, they died, their faces always to the foe. The world still rings with the names Virginia delights to honor. While Virginia lasts she will remember with pride her Lees, Stuart, Jackson, Hill, Ashby, Pickett, and others too numerous to mention, who lived to uphold her honor, and were willing to die for their State. The war closed with the surrender at Appomattox; arms were laid down; comrades shook hands and parted never to meet again, some going to the far South, some to remain at home in Virginia. Trusting in General Grant's parole, with General

Lee's blessing, they returned home to repair as they could the losses brought about by four years of war.

In 1865 martial law was declared, and lasted until the 9th of May following. Under the proclamation of Andrew Johnson, who, by the death of President Lincoln, came to be President of the United States, Francis H. Pierpoint, the pretended Governor of Virginia, assumed the government of the State, and held it until April 16th, 1868, when he was superseded by Henry H. Wells, under the military appointment of Gen. J. M. Schofield, commanding First Military District, in which Virginia was included, although there was no war and none expected. A State Convention was called by military authority, and met in Richmond in 1867. This convention framed a new constitution, which was adopted by a vote of the people July 6th, 1869, and the State was admitted into the Union. Gilbert C. Walker was elected Governor, and took his seat January 1st, 1870, for a term of four years. J. L. Kemper followed in 1874; Frederick W. M. Holliday followed in 1878. During his term the great State debt contest took place, the Readjuster party was formed, and William E. Cameron was elected Governor, and seated in 1882. In 1885 Fitzhugh Lee was elected. In 1889 Phillip W. McKinney was elected by a large majority; he took the chair 1st January, 1890, and during his term the State debt was settled by a committee of distinguished citizens of the United States, and agreed to by the Legislature, adjusted and bonded in 1892.

GOVERNMENT.

The constitution of the State, however changed in other particulars, is always prefaced by "A Bill of Rights" setting forth the rights of the people, the State and the general government.

This declaration is made a part of the organic law. It declares that all men are by nature equally free and independent; that they have inherent rights to the enjoyment of life and liberty, for acquiring and possessing property, and for pursuing and obtaining happiness and safety; that the State is a member of the United States of America, and its people a part of the American nation; that the constitution of the United States and the laws passed in pursuance of it are the supreme law of the land; that all power is vested in and derived from the people, and magistrates are their servants and trustees, and always amenable to them; that exclusive privileges belong to no man or set of men, and that no offices are hereditary; that the object of government is the common good of all, and that form is best which produces the greatest happiness and safety and is the best security against maladministration; that the people have a perfect right to reform or abolish any form of government as they shall judge best for the public welfare; that the legislative, executive and judicial powers should be kept separate, and that at fixed periods all officers should be remanded to private stations, so they may feel and share the burthens of the people; all vacancies are to be filled by frequent, certain and regular elections; that all elections ought to be free, and all men having an interest in the community should have the right of suffrage, and cannot be taxed or bound by any law without their personal or representative consent, expressed at a popular election, the will of the majority governing; that laws or their execution should not be suspended but by the consent of the people's representatives; that in all criminal prosecutions a man may demand the cause and nature of charges made against him, that he shall be confronted by his accusers and witnesses, may call for witnesses in his favor, shall have a speedy trial by an impartial jury of his vicinage, without whose unanimous consent he cannot be found guilty; that he cannot be compelled to give evidence against himself or be deprived of liberty but by law or the judgment of his peers; that excessive bail shall not be required or excessive fines imposed, or cruel or unusual punishment inflicted; that no general warrants of search shall be granted, on suspicion merely, without evidence of deeds done, or persons seized, unless by name and offence described, and supported by evidence; that trial by jury is preferable in controversies about property, and in suits between man and man, and should be held sacred; that the freedom of the press cannot be restrained, or the right of any citizen to speak, write or publish his sentiments upon all subjects, being responsible for the same, or for the abuse of that liberty; that the body of the people trained to arms are the proper and safe defence of a free

State; that standing armies in time of peace should be avoided, and that the military should always be subordinate to the civil power; that the people have a right to a uniform government, and that none independent of Virginia should be set up in her limits; that free government can only be preserved by a "firm adherence to justice, moderation, temperance, and virtue, and by a frequent recurrence to fundamental principles"; that there should be perfect toleration in matters of religion, all men being free to follow the dictates of conscience, at the same time recognizing the duty of mutual forbearance; that there shall be no involuntary servitude except imprisonment for crime; that all citizens of the State possess equal civil and political rights and public privileges; and finally, that the enumeration of rights does not limit other rights of the people because not enumerated. The government of the State is entrusted to three departments—"the Legislative, Executive and the Judicial, each with its distinct powers and officers."

THE LEGISLATURE,

Or law-making power, is vested in a General Assembly, consisting of a Senate and House of Delegates. The Senate is elected every four years—one-half to go out every two years. The Senate of Virginia numbers forty members. The House of Delegates consists of one hundred members, and is elected every two years. Any person resident in a district may be elected as a member of either body; he must continue a resident while he represents.

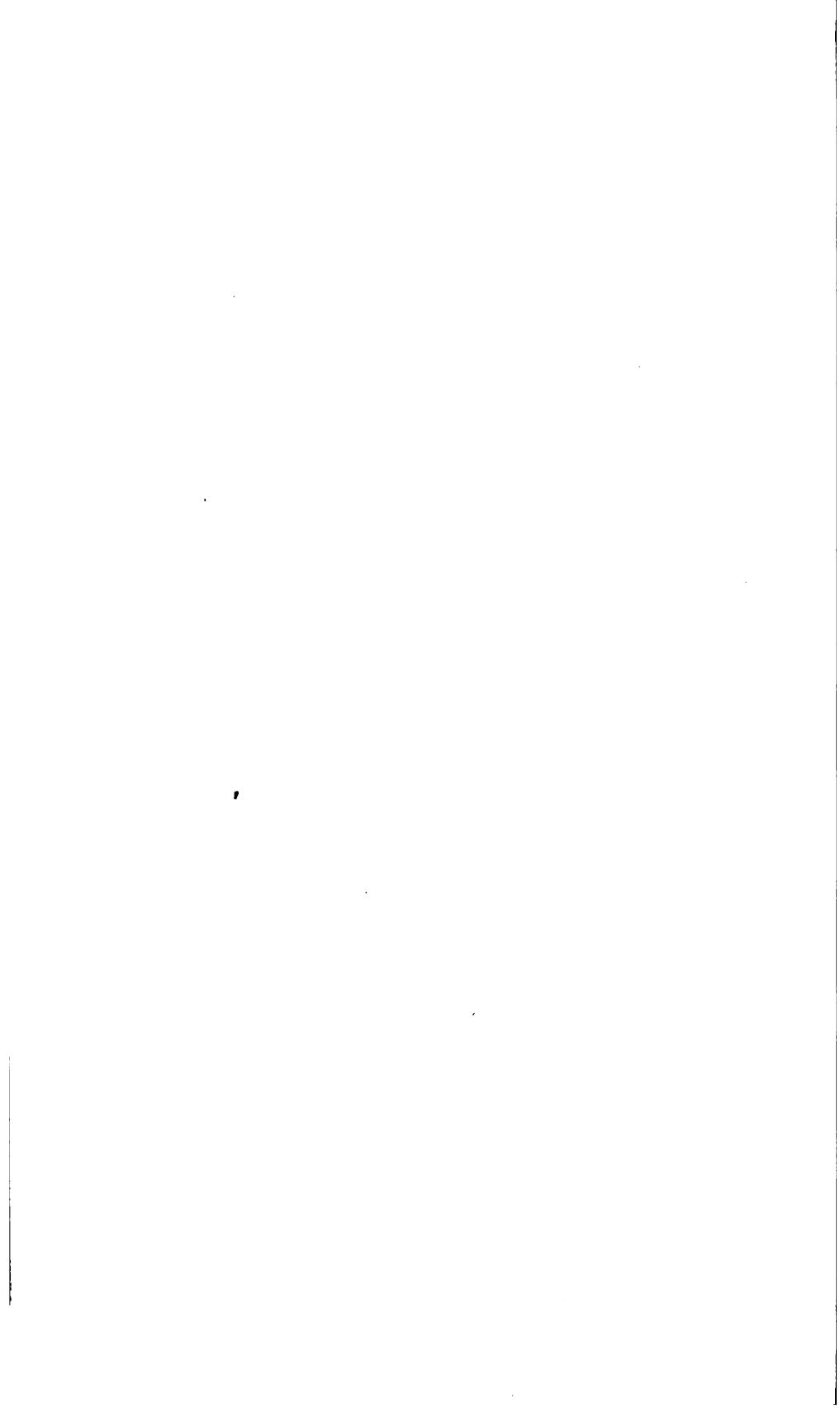
The Senate is presided over by the Lieutenant-Governor of the State, or, in his absence, by a President *pro tempore*. The House of Delegates is presided over by a Speaker, elected by the body from its own members. Bills may originate in either house, to be approved or rejected by the other. In order to make any bill a law, it must have passed the Senate and the House of Delegates and be approved by the Governor of the State. No law can embrace more than one object. The House of Delegates alone has power to prosecute for impeachment; the Senate the power to try such cases. The Assembly is forbidden the power to legislate in a number of cases, in that it cannot pass a bill of attainder, an *ex post facto* law, a law impairing the obligation of contracts, or taking private property for public purposes without just compensation, or one abridging the freedom of speech or of the press. It cannot compel any one to support or frequent any religious worship, or molest him in any way for his religious belief, nor can matters of religion affect one's civil capacities. The General Assembly cannot, by any religious test, confer any peculiar privileges on any sect, or authorize any society or people of any district to levy on themselves or others a tax for any church purposes, leaving each one free to select his own religious instructor as he may please, and provide for him by private contract. It cannot grant a charter of incorporation to any church or sect, but can secure the title to church property to a limited extent.

The General Assembly has no power to establish a lottery, or to form new counties, except under restrictions, and it must confer upon the courts the power to grant divorces, change names, direct sales of estates of infants, etc., avoiding special legislation where courts have jurisdiction.

The manner of conducting elections, making returns, filling vacancies in office, etc., is provided for by law.



HON. PHILLIP W. McKINNEY,
Governor of Virginia.



EXECUTIVE.

The executive power is vested in a Governor, elected for four years, and ineligible for the next four years after his term of service expires. The people choose the Governor at the election in November, before mentioned; he must be a citizen of the United States, and, if foreign born, must have been one for ten years; must be thirty years old, and have been a resident of the State three years previous to the election. The Governor must reside at the seat of government. His duties are to take care that the laws are executed; communicate to the General Assembly at every session the condition of the Commonwealth; recommend such measures for their consideration as he may deem expedient; call extra sessions of the General Assembly when he shall consider that the interests of the State demand it, or when he is requested by a two-thirds vote of its members. He is commander-in-chief of the land and naval forces of the State, and has power to embody the militia to repel invasion, suppress insurrection and enforce the laws.

The Governor holds intercourse with other and foreign States, and fills vacancies in offices when not otherwise provided for; he has also the pardoning power and the power of granting reprieves. He attests the commissions and grants of the State, and has the veto upon the acts of the General Assembly, as before recited.

A Lieutenant-Governor is elected at the same time as the Governor and for the same term, and having the same qualifications. In the event of the death or removal of the Governor from office, the Lieutenant-Governor becomes the chief executive of the State.

A Secretary of the Commonwealth, a Treasurer, an Auditor of Public Accounts, a Second Auditor, Register of the Land Office, Superintendent of the Penitentiary, Railroad Commissioner and Public Printer are elected every two years by the General Assembly. The Commissioner of Agriculture is appointed by the Governor.

A Board of Public Works is composed of the Governor, Auditor and Treasurer. A Board of Education, composed of the Superintendent of Public Instruction, the Governor, and the Attorney-General, has charge of the public schools of the State. The Superintendent of Public Instruction serves four years, and is elected by the General Assembly. A State Board of Agriculture, consisting of one member from each congressional district, is appointed by the Governor—one-half every two years—and not more than two-thirds can be of one political party.

JUDICIARY.

There are provided a Supreme Court of Appeals, consisting of five judges; Circuit Courts, of which there are sixteen judges, the State being divided into a number of judiciary districts; and County Courts, presided over by judges, one for each county, except counties with less than 8,000 inhabitants, in which case the county is attached to some adjoining county. The judges of the Court of Appeals are chosen by the General Assembly for a term of twelve years. The judges of the Circuit Courts are chosen by the General Assembly for a term of eight years. The Attorney-General, who is attorney for the Commonwealth, is elected with the Governor and Lieutenant-Governor every four years. The judges of the County Courts are chosen by the General Assembly for six years.

The voters of each county elect every three years a Sheriff, County Treasurer, Commonwealth's Attorney, and a Superintendent of the Poor, and every six years a County Clerk, and counties having over 15,000 inhabitants a separate Circuit Court Clerk. The counties of the State are divided into districts, not less than three in a county, in which are elected biennially a Supervisor and an Overseer of the Poor. These hold office two years. They also elect three Justices of the Peace and three Constables, for a term of three years. The Supervisors of each township audit accounts of the county, examine the books of the Assessors, regulate and equalize the valuation of property for purposes of taxation, fix and apportion the county levy. There are also school districts in each township. All able-bodied men, except such as are exempted by law, form the militia of the State.

HOMESTEAD AND OTHER EXEMPTIONS.

Every householder or head of family can hold a homestead valued at \$2,000 free from seizure of debt, except for the purchase of property, the services of a laboring man, a mechanic's lien, for liabilities as a public officer, fiduciary, and for taxes, legal fees, for rents or for mortgages on the same. By the law many articles are exempt from seizure. The laws in relation to homesteads may be construed liberally. No law can stay the general collection of debts. The homestead may be evaded; the poor debtor's exemption cannot. These are some provisions of the law of which a stranger to the State might wish to have the salient features.

Aliens may hold real estate in Virginia. The State is divided into ten congressional districts. Every four years the General Assembly elects a member of the Senate of the United States. No one can hold office in Virginia who has engaged in a duel since January, 1870, or who holds an office of any kind under the United States Government; nor can any one who has been convicted of a felony. No one can buy, sell or farm out an office except the Sheriff. A lawful fence is five feet high. The State tax is 40 cents on \$100 worth of all real and personal property for State purposes, and 10 cents for public schools.

Taxation must be equal and uniform; no special tax can be imposed; no tax can be imposed for taking oysters with tongs from the natural beds; incomes in excess of \$800 per year may be taxed; property used exclusively for State, city, county, religious, educational and charitable purposes may be exempted from taxation.

Cities with over 5,000 inhabitants may have a government similar to a county; under that number they may have a separate government, remaining a part of the county. A capitation tax of one dollar is levied on all males over 21 years of age for school purposes. Liquor dealers, shows, etc., may be taxed specially and license required. Counties and corporations are limited to a capitation tax of fifty cents for all purposes. Lands are valued every five years. The State cannot contract a debt except to meet casual deficits in revenue, pay former liabilities, or for the defence of the State; and every law creating a debt must provide a sinking fund to pay it.

The same bonds of the State are everywhere to bear the same rate of interest. No money can be paid from the Treasury except it has been first by law appropriated. It requires a majority of each house to make an appropriation, and by a recorded vote. The credit of the State cannot be granted in aid of any person, association or corporation, and no bond of the State can be

given except to pay a former debt; nor can it become a party in any company, or carry on works of internal improvement except in the expenditure of grants to it for the purpose. The State is forbidden to pay the debts of counties, boroughs or cities, or to lend them its credit. The expenditures of the State and its indebtedness must be published every year with its laws. It cannot release any incorporated company or institution from the payment of money due the State.

No intoxicating liquors can be sold on Sunday, or sold or distributed election-day in any county, corporation or district. Voting is by secret ballot. Overseers of the Poor are required to arrest all vagrants and beggars.

Ample provision is made for chartering companies. Provision is made for preservation of the public health. Provision is made for the inspection of commercial fertilizers and the inspection of certain kinds of provisions. There is a standard for and sealer of weights and measures. There are public scales in cities and towns, and live stock and other articles may be required to be thus weighed. Counties can, and some do, have special laws for working the roads, and the protection of sheep, game and fish. The State has jurisdiction over all tide-waters, and reserves its fishing and hunting for its own residents. Railroads "pay tax" at valuation of Board of Public Works for State, school and county purposes.

THE MILITIA.

The militia of the State is composed of all male persons between the age of eighteen and forty-four, except such as are exempt by law. The census of 1890 shows the number to be 295,340. The Governor is commander-in-chief of the militia of the State.

The following is a list of the officers, taken from the report of the Adjutant-General :

His Excellency Philip W. McKinney, Governor and Commander-in-Chief.
Brig. James McDonald, Adjutant-General.
Lieut.-Col. Jo. Lane Stern, Assistant Inspector-General.

AIDES-DE-CAMP.

Col. Miles Cary, Chief Aid, Richmond, Va.
Col. Meade Haskins, Judge Advocate-General, Richmond, Va.
Col. William T. Adkins, Quartermaster-General, Boydton, Mecklenburg Co.
Col. Robert Catlett, Commissary-General of Subsistence, Glasgow, Rockbridge.
Col. C. Fenton Day, Chief of Ordnance, Springfield, Isle of Wight.
Col. C. M. Walker, Aide-de-Camp, Farmville, Prince Edward.
Col. L. T. W. Marye, Aide-de-Camp, Richmond city.

The active militia, designated by law the Virginia Volunteers, consists of the following :

First Brigade of Infantry.
First Battalion Artillery.
First Regiment Cavalry.
First Battalion (colored) Infantry.
Second Battalion (colored) Infantry.

The First Brigade consists of the First, Second, Third, and Fourth regiments of infantry.

First Regiment, six companies, Col. Henry C. Jones commanding, headquarters Richmond.

Second Regiment, ten companies, Col. Joseph A. Nulton commanding, headquarters Winchester.

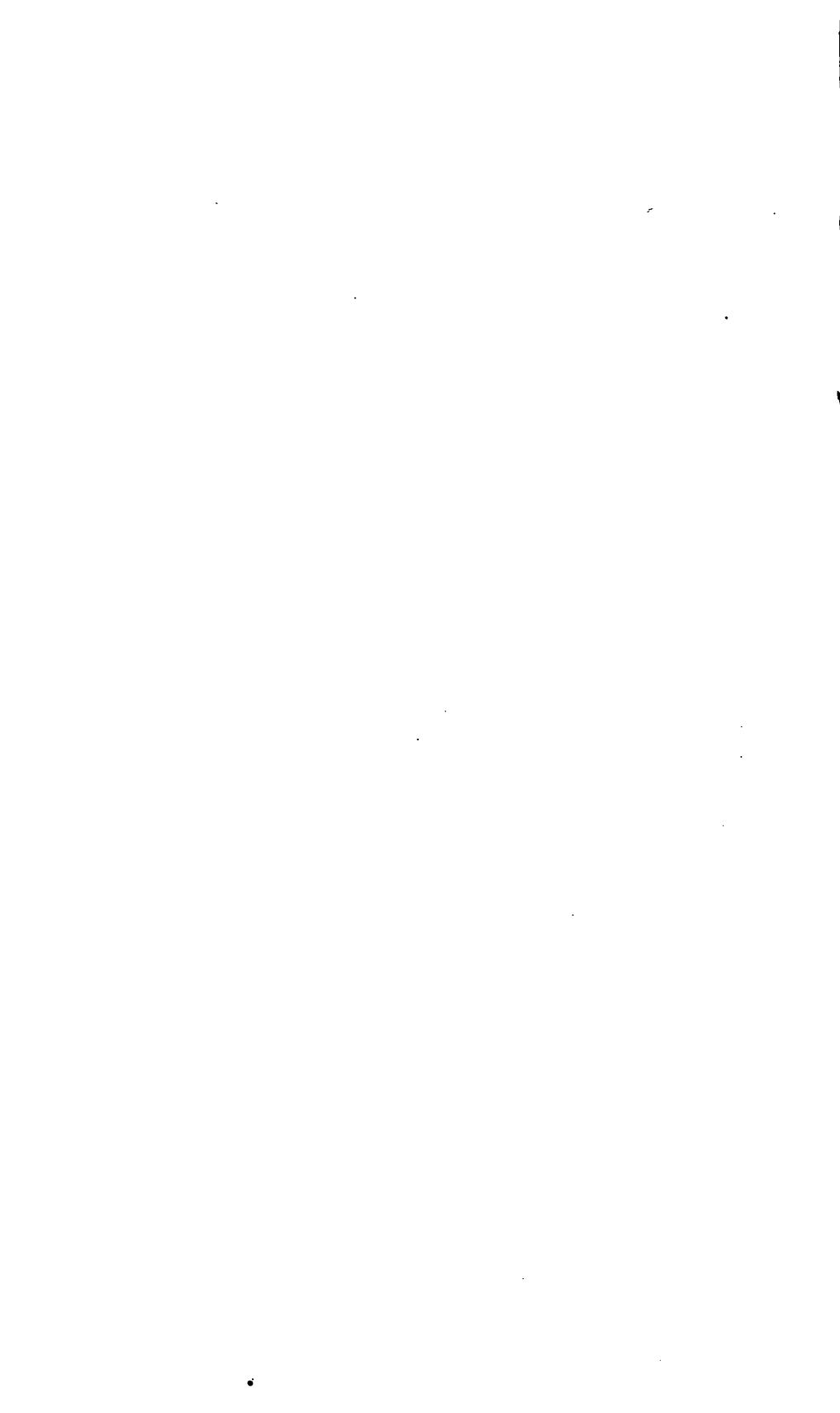
Third Regiment, eight companies, Col. William Nalle commanding, headquarters Culpeper.

Fourth Regiment, ten companies, Col. Camillus A. Nash commanding, headquarters Norfolk, Va.

(The Richmond Light Infantry Blues are unattached.)



VIRGINIA MILITARY INSTITUTE.
Lexington, Va.



The First Battalion Artillery, Maj. William E. Simons commanding, headquarters Richmond, consists of the following batteries:

- Battery A, Richmond Howitzers, Richmond.
- Battery B, Norfolk Light Artillery Blues, Norfolk.
- Battery C, Grimes' Battery, Portsmouth.
- Battery D, Light Artillery Blues, Lynchburg.
- Battery E, R. E. Lee Battery, Petersburg.

First Regiment Cavalry, Col. W. F. Wickham commanding, headquarters Richmond, consists of the following companies:

- Troop A, Stuart Horse Guard, Richmond.
- Troop B, Surry Cavalry, Surry county.
- Troop C, Fitz Lee Troop, Lynchburg.
- Troop D, Hanover Troop, Hanover county.
- Troop E, Prince George Cavalry, Prince George county.
- Troop F, Chesterfield Troop, Manchester.
- Troop G, Ashby Light Horse, Richmond.

First Battalion Colored Infantry, Maj. J. B. Johnson commanding, headquarters Richmond, is composed of the following companies:

- Company A, Attucks Guard, Richmond.
- Company B, Carney Guard, Richmond.
- Company C, State Guard, Richmond.
- Company D, Garfield Light Infantry, Fredericksburg.

Second Battalion Colored Infantry, Maj. W. F. Jackson commanding, headquarters Petersburg:

- Company A, Petersburg Guard, Petersburg.
- Company B, Langston Guard, Norfolk.
- Company C, Petersburg Blues, Petersburg.
- Company D, Flipper Guard, Petersburg.
- Company E, National Guard, Norfolk.

The militia receive arms, equipments and quartermaster stores, when needed, from the United States. They get from the State one-half of one per cent. on the revenues of the State, amounting in 1892 to \$11,362.50. In 1891 the distribution of this fund, after paying all necessary expenses, amounted to \$10 to each general, field and staff officer, and \$3 for each infantryman, and \$4 for each artilleryman and cavalryman. The money so distributed goes to promote the efficiency of the companies in the service. This active militia has been very efficient and prompt in suppressing riots when called on by the Governor.

PENAL INSTITUTIONS.

The Penitentiary is under the care of a Superintendent and Board of Directors. The Superintendent is elected by the Legislature for a term of two years. The Superintendent reports to the Board, and the Board to the Governor. The Board hold weekly meetings, and all matters affecting the entire management come before it. There is also a physician appointed by the Governor. In addition to the Superintendent there are forty guards, three of whom are called Assistant Superintendents. These guards receive their places and their work from the Superintendent and look to him for orders in all matters affecting the prison. The convicts are required to labor from 6 (at which time they leave their cells) in the morning to 12, when they take one hour for dinner, then again from 1 to 6 in the afternoon.

The convicts, male and female, work in the shoe factory, where 3,000 pairs of shoes are made per day. The tobacco factories are worked by men only. The present crowded condition of the Penitentiary, and the large number who are idle, has led to the putting up of additional buildings for work-rooms. These buildings will be completed this year. The present buildings have just been added to and remodelled, giving many additional cells. The buildings are all of substantial brick, surrounded by a broad and high white wall.

The women's ward is built on modern principles, with all needed improvements. One guard is always in charge of the women's ward, and the matron has oversight of all that especially affects the women. The care of the cells, the clothing and the hospital are among her duties.

The present matron (the first) entered upon her duties May, 1892. The law providing for such an officer was passed by the Legislature the winter of 1891-'92 by a unanimous vote. Public opinion seemed to demand it, and experience has proved the change to be good. The benefit is demonstrated by the improved behavior of the inmates and general quiet and order of the department. The Superintendent reports for 1892 the total number of convicts received during the year ending September, 1892, 505—355 from counties, 150 from cities; 92 white men, 3 white women; 241 colored men, 19 colored women. He also reports 1,006 inside the walls of the Penitentiary, and 225 on the public works, making a total of 1,321. There are nine life prisoners, 3 of whom are white men, 4 colored men and 2 colored women. The Sabbath is kept sacred as far as possible within prison-walls by church services in the morning and Sabbath-school in the afternoon. There is no chaplain, but religious people, ministers and laymen and ladies, volunteer for this service.

There is a chapel in the women's ward which was partly built by private donations. This chapel has the usual chapel furniture, an organ, chairs, book-case for library, and handsome bible. The chapel in the men's ward is a plain room set aside by the prison authorities for that purpose; they also have an organ.

The hospitals are well managed, and the health of the inmates as good as could be expected. The greatest care is taken to keep the sanitary condition of the institution as it should be. The inner courts are clean and well paved, with a large fountain in each ward.

The following are the Board of Directors and officers of the Penitentiary: F. T. Glasgow (chairman of Board), F. W. Chamberlayne, W. D. Chesterman, B. W. Lynn, superintendent; John W. Nash, surgeon; Mrs. Lavinia Page, matron. The Penitentiary is located at Richmond, Va.

PUBLIC JAILS.

Every county in the State and all cities and large towns have a separate jail. The jails in the county are under the control of the sheriff; in cities and towns, of the sergeant. The expenses of jails are paid by corporations or counties. Women and men are separate; also, white and colored men are in different compartments. All over the State there is an improvement in jails and the management of penal institutions; buildings are being made more secure, and efforts to secure health and prevent escapes are being made everywhere. During trial for felonies persons on trial are kept in jail and carefully guarded.

THE REFORMATORY.

There is a reformatory for boys established at Laurel, a station on the Richmond, Fredericksburg and Potomac Railroad about eleven miles from Richmond. This institution is the result of individual effort; Major Robert Stiles, of Richmond, being the main promoter. The Prison Reform Association, of which he is president, received an appropriation from the State to enable it to erect new buildings. These buildings are soon to be completed. There are accommodations at present for about 100 boys. These boys are all white. An act of Assembly empowers the State to give into the hands of the Prison Reform Association boys under sixteen who had been sent to the penitentiary on short terms or were in jail. This institution is well situated, and the boys seem contented and happy; are all learning to work and to respect the moral law and the laws of the land.

HUMANE INSTITUTIONS.

There are four insane asylums in the State. The Western is located at Staunton. The grounds and buildings are handsome and the appointments complete. This institution is intimately connected with the memory of Dr. Stribling, who introduced many reforms and made improvements upon old plans and devised more humane methods of managing the unfortunates under his care. The institution has a high and well-deserved reputation and has an efficient corps of physicians, one of whom is a woman, who is filling her place acceptably as an assistant physician in the women's ward. This asylum had in 1892, 600 inmates. Dr. Benjamin Blackford, Superintendent.

EASTERN LUNATIC ASYLUM.

The Eastern Lunatic Asylum is located at Williamsburg. The buildings and grounds are large and beautiful. The average number of inmates during the year was 428—245 males, 178 females. The Legislature of 1891-92 appropriated \$12,000 for additional buildings. This is an old lunatic asylum, having been founded in 1768—the first patient received in 1773; but such changes have been made in the past few years that puts the institution abreast of any in all that makes an effective asylum for the insane. The climate here is unsurpassed for healthfulness. Located in the quaint old city of Williamsburg, the new buildings and the electric-light plant seem to belong to another day than the quiet streets and colonial church and old college that together go to, make up Williamsburg. Dr. J. D. Moncure is Superintendent.

THE SOUTHWESTERN LUNATIC ASYLUM.

The Southwestern Lunatic Asylum is located at Marion, Va. It is well situated, has electric-light plant and a farm and garden attached. It has also a fish pond and a maple-sugar orchard. The plans on which it seems to be managed are good. The number of inmates remaining September, 1892—108 males, 154 females; total, 262. The building is large and handsome, situated on a hill above the town of Marion. The climate is healthful and the health of the inmates excellent. Robert J. Preston, M. D., Superintendent.

THE CENTRAL LUNATIC ASYLUM

The Central Lunatic Asylum is located near Petersburg. It is exclusively for colored people. The last Legislature made an appropriation of \$20,000 for buildings for the use of female patients. The inmates have simple pleasures provided for them; the dance Thursday evenings, cards, marbles and other games, with daily walks and exercise, are considered a benefit. There are numbers who do light work in the kitchen, the laundry, dining-rooms, sewing-rooms, garden and farm. The financial condition, the Superintendent reports is good. The Superintendent is Randolph Barksdale, M. D.

ALMSHOUSES.

Every county and every corporation is required to provide for the maintenance of all indigent persons within its limits. The county poorhouse is generally on a farm owned or rented by the county, where the poor are kept and cared for. Food and clothing and medical attention are provided by law; and, although there may be sometimes cases of neglect, there is no record of cruelty or willful wrong being done by which the poor are made to suffer. There is a class of people known as the "outside" poor who receive assistance from the county, through the overseers of the poor, but live at home. These are most common in country places. Persons who are inmates of poorhouses who are able to work are required to do so; but there is seldom real labor done by any who are dependent upon this kind of charity for support.

There are in the towns and cities comfortable houses where all who apply can find a shelter and such attention as their necessities demand. With these is sometimes connected a hospital, where any person unable to pay for his or her physician and nurse can have every care during sickness, or in cases of accidental injury of any kind. One of the best of the kind is in the city of Richmond. The city almshouse is also the city hospital. There is a separate building for white and colored, and entirely separate apartments for males and females, and for children and foundlings.

The Richmond almshouse is most admirably arranged; is a large, well-furnished, well-kept house. The entire institution is one of which any city might be proud. There is a dispensary, resident physicians, and competent nurses, and old and young and the poor are cared for in the best manner.

Richmond has also what is known as its Public Charities, where outside help is given with liberality, but with proper precaution against imposition. The city has also free physicians for the poor, who go whenever sent for, and are paid by the city. There are many private charities, for no people are more active in all good work of this kind than the people of Richmond. Religious services are held in the chapel at the Almshouse every Sunday, and visitors who feel inclined can go into the hospital and infirmary and comfort and instruct, as they think best, those who from sickness or age are confined within their own rooms. The same can be said of all the large cities of the State.

Besides the city hospitals there are hospitals under the care of societies and organizations of different kinds, which are aiming to help wherever help is needed. Homes for old ladies and orphans' homes, boys' and girls' homes, and charity kindergartens are in all the large cities of the State, and in smaller ones, so far as the needs and the ability permit it. Virginia hospitality is proverbial; Virginia charity should be so, for no person suffers who takes the proper means to prevent doing so.

EDUCATION.

In the year 1879, Dr. W. H. Ruffner, Superintendent of Public Instruction, prepared for the then Commissioner of Agriculture, Dr. Thomas Pollard, a synopsis of the public school system and laws. This appeared in the first report of the Commissioner of Agriculture, and was condensed for the first Hand-Book. The following extract is sufficient to let the reader get a general idea of the free school system of Virginia:

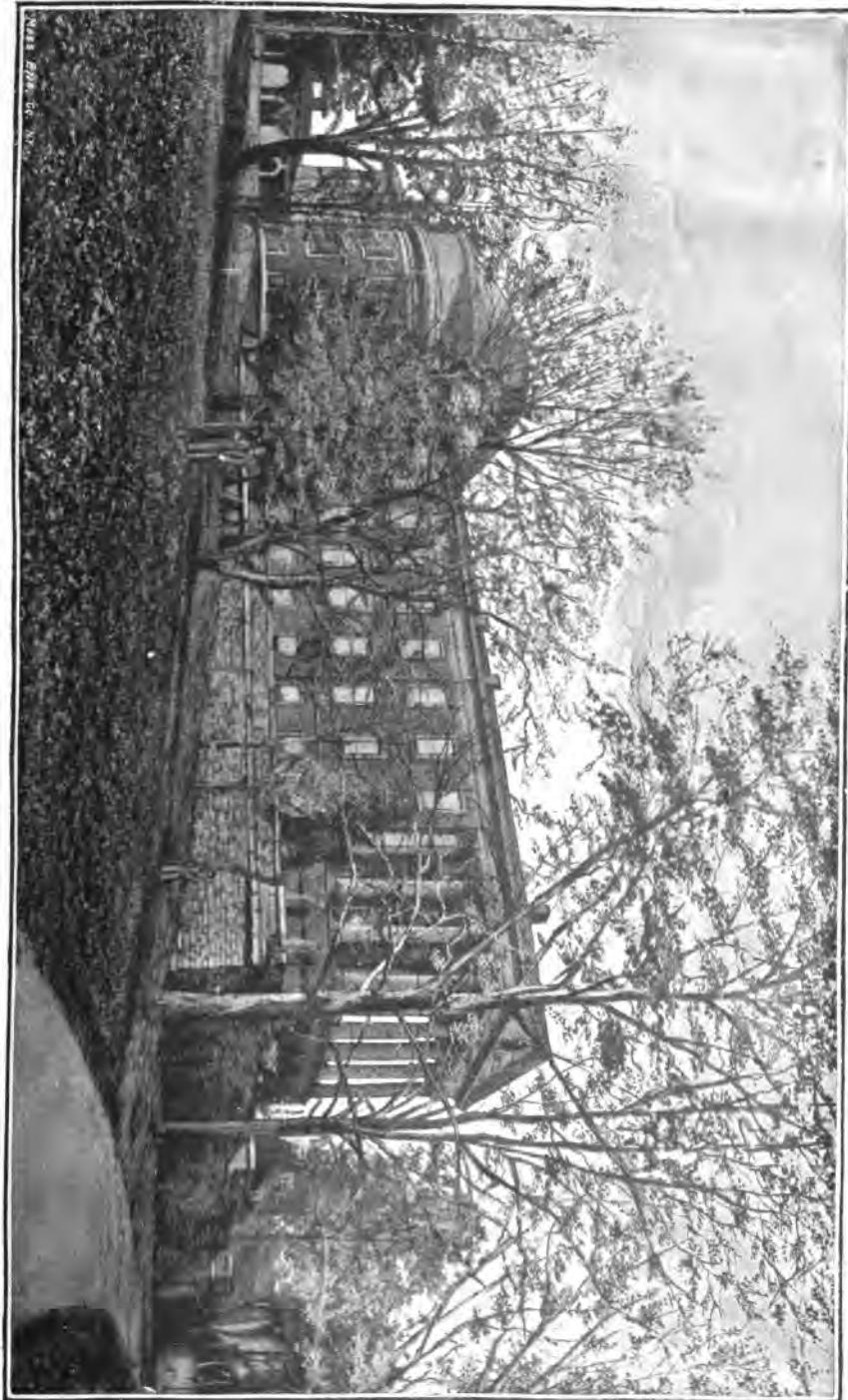
"There was no real public free school system in the State prior to the war, although there was in existence some provision for the education of the children of the poor; that is to say, for the whites. In 1850 there were, in all the schools of the State, private and public, 52,000 children; in 1860 there were 67,000 (all white), of whom 31,000 were pauper children.

"The constitution framed for the State in 1868, under the reconstruction acts, provided for a system of public free schools to be supported by taxation, State and local, and by the interest received from the literary fund (derived from fines, forfeitures and escheats). The system was to be administered impartially as between the races, and to be in full operation by 1876. The first Legislature which met after the adoption of this constitution promptly took up the subject, and on the 11th of July, 1870, passed a complete school law, embodying a thorough and effective public free school system, which was immediately put into successful operation, and has since continued steadily to grow in strength and usefulness.

"We have stated that in 1860 there were 67,000 children (all white) attending the schools (primary and secondary) of the State. In the year 1870 the number was only 59,000, of whom some 10,000 were colored pupils (attending schools established by Northern societies and the Freedmen's Bureau). A great change occurred immediately on the introduction of the State school system. In 1870-'71, the total number of children at school rose to 158,000, an increase of nearly 100,000 in one year. Excepting one year, there has been a gain in the public schools every year since their establishment. In 1875 the whole number of pupils (white and colored) enrolled in the public schools was 184,000; in 1876 the number was 200,000; in 1877 the number was 205,000. To these are to be added about 25,000 attending private schools, which would give as the whole number of children now enrolled in all the schools of the State, 230,000. Of the 205,000 in the public schools in 1876-'77, 140,000 were white and 65,000 colored.

"The public school system is administered by a State Board of Education, consisting of the Governor, the Attorney-General, and the Superintendent of Public Instruction. This board controls the State school fund, and appoints and removes county and city superintendents, subject to confirmation by the Senate."

The schools are free to all children between 5 and 21 years of age. Equal educational privileges are secured by law to white and colored children, with



UNIVERSITY OF VIRGINIA.
(Near Charlottesville.)



the provision, however, that they shall be taught in separate schools. The minimum school term is five months, and fifteen is the minimum number of pupils prescribed to constitute a school.

There were in Virginia, according to the report of 1876-'77, nearly 4,700 public schools, taught by about the same number of teachers. In 1890 there were 7,511 schools, 7,520 teachers, 342,289 pupils. In 1891 there were 7,689 schools, 7,718 teachers, 342,720 pupils.

There are graded schools in most of the counties and high schools of great excellence in all the cities and considerable towns. These high schools prepare in the best manner students for the colleges and universities of the State.

The following institutions receive State aid and are managed by boards of visitors appointed by or are under the control of the State Board of Education, which is composed of the Governor, the Attorney-General and the Superintendent of Public Instruction, to whom by law they are required annually to report, to-wit: The University of Virginia, the Virginia Military Institute, the Virginia Agricultural and Mechanical College, the State Female Normal School, the College of William and Mary (the State Male Normal School) the Institution for the Deaf, Dumb and Blind, the Medical College of Virginia, the Virginia Normal and Collegiate Institute, the Hampton Normal and Agricultural Institute. A full description of each is here given in the above order.

UNIVERSITY OF VIRGINIA.

The University of Virginia was founded by act of Assembly 25th January, 1819. Thomas Jefferson was president of the commission which made the report on the plan, site, organization, and system of government of the new University. He was made the first rector, and spent six years in erecting buildings, purchasing books and apparatus, and collecting a Faculty. Finally, on the 5th of March, 1825, the University was opened for students.

Jefferson is justly described as the "Father of the University." He prescribed the organization of the schools which composed the University, introduced the elective system of studies, and the independent authority and undivided responsibility of the professor in charge of each course, and established the honor system of government. All the distinctive features of the University were thus originated by him.

As at present organized the Faculty consists of twenty professors, three adjunct professors, and sixteen instructors and lecturers. These are distributed among the several departments. In the Academical and Engineering Departments there are twenty-nine instructors of all classes; 151 lectures are delivered weekly to under-graduate students, and besides there are nineteen distinct post-graduate courses. In the Law Department there are three professors and instructors, and thirteen lectures a week. In the Medical Department there are twelve professors and assistants, and seventeen lectures a week. In addition to the lectures there are many associated laboratory exercises in the Scientific Schools, and corresponding work in essay writing and parallel reading in the Literary Schools.

The equipment for purposes of instruction is extensive and valuable. The University library contains over 53,000 volumes, and is exceeded in number and value only by a few of the largest Northern universities. The Astronomical Observatory has an equipment valued at \$50,000, which includes the finest telescope in the East. The Department of Natural History has collections of

specimens and scientific apparatus valued at \$45,000; Chemistry, \$15,000; Physics, \$10,000; Mechanics, \$5,000. The buildings devoted to the work of instruction are eight in number, and cost, exclusive of their contents, \$217,286. The estimated value of the contents is about \$230,000.

The annual income of the University is about \$115,000, derived as follows: From the State annuity, \$40,000; from invested funds, about \$20,000; from students' fees, about \$55,000. There is a debt contracted for internal improvements upon which the interests and sinking fund make an annual charge of over \$7,000. This leaves free less than \$108,000 for the instruction of 540 students, an average of \$200; the amount at the larger universities of America usually exceeds \$300 per student. Of the whole number, 300 are Virginians, and of these 160 are educated without charge for tuition, while to all the cost of education is much reduced by the equipment of the State University.

The attendance has increased gradually for the last ten years from 300 to 540, or 80 per cent. It is now larger than at any period in the history of the school, except from 1855 to 1860, when the numbers ran from 558 to 645 in one season (1858), averaging about 603 for the six sessions. The departments of law and medicine number 145 each. The academical and engineering schools are also fully attended.

A list of the professors, instructors and officers is appended:

Faculty.

William M. Thornton, LL. D., Chairman.
 M. Schele De Vere, Ph. D., J. U. D., Modern Languages.
 John B. Minor, LL. D., Common and Statute Law.
 Francis H. Smith, M. A., LL. D., Natural Philosophy.
 George Frederick Holmes, LL. D., Historical Science.
 Charles S. Venable, LL. D., Mathematics.
 William E. Peters, LL. D., Latin.
 Noah K. Davis, M. A., Ph. D., LL. D., Moral Philosophy.
 William M. Fontaine, M. A., Natural History and Geology.
 Ormond Stone, M. A., Practical Astronomy.
 James M. Garnett, M. A., LL. D., English Language.
 William M. Thornton, LL. D., Applied Mathematics.
 Francis P. Dunnington, B. S., Analytical and Agricultural Chemistry.
 James H. Gilmore, LL. D., Constitutional and International Law, Equity, etc.
 John W. Mallet, M. D., Ph. D., LL. D., F. R. S., Chemistry.
 William B. Towles, M. D., Anatomy and Materia Medica.
 William C. Dabney, M. D., Medicine, Obstetrics and Medical Jurisprudence.
 Milton W. Humphreys, M. A., Ph. D., LL. D., Greek.
 Albert H. Tuttle, M. S., Biology and Agriculture.
 Paul B. Barringer, M. D., Physiology and Surgery.
 Charles W. Kent, M. A. Ph. D., English Literature.
 William Howard Perkinson, Ph. D., Modern Languages.
 Richard Heath Dabney, M. A., Ph. D., History.
 William Holding Echols, B. S., C. E., Applied Mathematics.

Instructors.

William G. Christian, M. D., Anatomy.
 Hugh T. Nelson, M. D., Clinical Surgery.

Harrison Randolph, M. A., Mathematics.
John B. Minor, Jr., B. L., Law.
James P. C. Southall, Physics.
James H. Corbitt, B. A., B. Ph., Physics.
Phipps Miller, Civil Engineering.
George M. Peek, Mechanical Engineer.
James H. Paxton, B. A., Latin and Greek.
Emerson H. George, A. M., French and German.
William J. Martin, M. D., Chemistry.
A. Damer Drew, M. D., Biology.
L. Coleman Morris, M. D., Anatomy.
Edgar O. Lovett, A. B., Astronomy.
William A. Lambeth, M. D., Physical Culture.

Lecturer.

S. Rolfe Millar, Ph. D., Socialism and Communism.

Officers.

Frederick W. Page, Librarian.
James B. Baker, Secretary.
Green Peyton, B. A., Proctor.
William H. Echols, C. E., Superintendent.
Samuel B. Woods, Commissioner of Accounts.

Chaplain.

Rev. James L. Lancaster.

VIRGINIA MILITARY INSTITUTE, LEXINGTON VA.

The Virginia Military Institute was established under an act of the General Assembly of Virginia, passed in March, 1839; and the first corps of cadets were mustered into the service of the State on the 11th day of November, 1839. Up to that time a company of soldiers had been maintained by the State, at an annual charge of \$6,000, to garrison the western arsenal at Lexington, in which were stored 30,000 muskets and a large quantity of military stores. In 1836, J. T. L. Preston, Esq., a citizen of Lexington, afterwards for thirty-seven years an honored professor upon the active list, and then emeritus professor in the institute, conceived the idea of substituting for the company of soldiers who guarded the arsenal a company of cadets, who, in addition to the duties of an armed guard, should pursue a course of scientific and military studies. This was consummated by the act of March, 1839. In May, 1839, the first Board of Visitors met in Lexington. Of this board Colonel Claude Crozet, a graduate of the Polytechnic School of France, a soldier under Napoleon in the Russian campaign of 1812, and subsequently a professor in the United States Military Academy at West Point, and at the time a citizen of Virginia, was president. The first act of the new board was to recognize the eminent fitness of General Francis H. Smith, a distinguished graduate of West Point, and at that time professor of mathematics in Hampden-Sidney College, for the position of superintendent.

The Legislature increased the annuity from time to time, and appropriated large amounts to provide new barracks and to equip the institution. In 1861

the school was full to its capacity. In April, 1861, at the call of the State, the corps of cadets, under the command of Major (afterwards Lieutenant-General) Jackson, marched for Richmond. These cadets were employed in instructing and drilling the large number of volunteers assembled for organization and instruction in Camp Lee, near Richmond, but were soon disorganized and scattered by the advancement of cadets to military rank in the different grades of service. In 1862, upon the demand of the military authorities of the Confederate States for the reorganization of the institute as a training school, to supply skilled and educated officers for the armies, the institute was reopened. During the war the cadets were repeatedly called into active service in the Valley of Virginia and on the lines around Richmond. On the 15th of May, 1864, at New Market, the corps of cadets, organized as a battalion of infantry of four companies, and as a platoon of artillery, serving two 3-inch rifled guns, lost over fifty killed and wounded out of an aggregate of 250. On the 11th of June, 1864, the barracks, mess-hall, officers' quarters, the library, containing about 10,000 volumes, and all the apparatus and instruments of the various departments of the school were burned, by order of General David Hunter, commanding the United States army at that time operating in the Valley of Virginia. From providential causes the quarters of the superintendent escaped destruction, and was the only building left standing upon the grounds. In October, 1865, after the close of the war, the institute was reopened. The buildings and equipments of the school were rapidly restored, and the institute entered upon an era of unprecedented prosperity. The course of instruction was enlarged and extended. Appliances of instruction were provided in the departments of chemistry, physics, geology, mineralogy, engineering, drawing and surveying. The illustrious record of services rendered by her sons during the war has established the reputation of the Virginia Military Institute upon an enduring foundation. Upon the roll of her academic staff are to be found the names of Stonewall Jackson, Matthew F. Maury, Crutchfield, Gilham, Massie, Madison, Blair, Washington, Williamson, Lee, Preston and Smith. On the 1st day of January, 1890, Maj.-Gen. Francis H. Smith, who had filled the position of superintendent from the foundation of the school, and had restored it from its ruins after the war, sought in retirement the repose he had so well earned by fifty years of active and distinguished service. On the 21st day of March, 1890, General Smith died, in the seventy-eighth year of his age. On the 15th day of July, 1890, Colonel J. T. L. Preston, who, with General Smith, constituted the entire faculty of the school from 1839 to 1842, died, in the eightieth year of his age.

The extensive grounds and buildings of the institute are located upon the outskirts of the town of Lexington, upon an eminence overhanging Wood's Creek, just above its confluence with North River. The varied scenery of this beautiful Valley of Virginia, bounded on the east by the Blue Ridge, on the west by the Alleghany chain of mountains, attracts universal admiration. The elevation is one thousand feet above tide-water; the air is pure, healthful, and invigorating.

Under the provision of the Code of Virginia, cadets admitted to the institute consist of two classes—State cadets; pay cadets.

The State supplies the State cadet with board, tuition and quarters; the pay cadet pays all his own expenses. The average annual cost for the four years'

course, exclusive of cost of outfit, is: For the pay cadet, \$365; for the State cadet, \$165.

Matriculation Promise.

"I promise that I will not, while a cadet, become a member of any secret society or organization existing in or outside of the institute; nor will I attend any meetings of such society. And (if a State cadet) I further promise to serve in the capacity of a teacher in some school within this State for two years after leaving the institute, after having received its benefits for two years as a State cadet, unless excused by the Board of Visitors. I furthermore promise on honor that I will not engage in hazing, intentionally injuring or maltreating in any form the person of any cadet, or give countenance or encouragement thereto while I am a member of the corps of cadets."

Number of cadets 1891-'92, 207.

Academic Staff.

Gen. Scott Shipp, Superintendent.

Col. John M. Brooke, Professor of Physics and Astronomy.

Col. Thomas M. Semmes, Professor of Modern Languages and Rhetoric.

Col. E. W. Nichols, Professor of Mathematics.

Col. Thomas R. Marshall, Commandant of Cadets and Professor of Tactics.

Col. R. A. Marr, Professor of Engineering, Architecture, Geodesy and Drawing.

Col. Hunter Pendleton, M. A., Ph. D., Professor of General and Applied Chemistry.

J. S. Parke, First Lieutenant Twenty-first Infantry, U. S. A., Professor of Military Science and Instructor of Artillery Tactics.

Maj. N. B. Tucker, Adjunct Professor of Chemistry, Geology and Mineralogy.

Capt. Francis Mallory, Assistant Professor of Mathematics.

Capt. S. B. Walker, Assistant Professor of Drawing and Tactics.

Capt. L. T. Hyatt, Assistant Professor of Mathematics, Physics, Astronomy and Tactics.

Capt. J. H. Gilkerson, Assistant Professor of Modern Languages and Tactics.

Capt. W. T. Voorheis, Instructor of Latin.

Military Staff.

Capt. Francis Mallory, Adjutant.

John A. Graham, M. D., Surgeon.

Col. W. T. Poague, Treasurer and Military Storekeeper.

Maj. F. W. Houston, Commissary and Quartermaster.

Capt. J. W. Gillock, Assistant Military Storekeeper.

**THE VIRGINIA AGRICULTURAL AND MECHANICAL COLLEGE
BLACKSBURG, VA.**

In 1862 Congress donated to the several States large bodies of the public lands for the endowment of colleges giving special prominence to instruction in agriculture and the mechanical arts.

This grant was accepted by the General Assembly of Virginia in 1872, and the Virginia Agricultural and Mechanical College was opened to students in the fall of the same year.

In 1887 Congress gave to each State \$15,000 annually for the establishment and support of an agricultural experiment station. In 1888 the station was made, by act of Assembly, a department of the college.

In 1890 the college was allowed two-thirds of the additional amount annually appropriated by Congress to each State for the further endowment of its land-grant college.

The sciences, especially those related to agriculture and the mechanic arts, hold at this college, in strict accordance with the acts of Congress from which it derives its income, the foremost place. Large provision is made for instruction in their principles and applications to the industries of life.

Buildings and Grounds.

The buildings are mostly of brick. The halls and lecture-rooms are large and well lighted. The students' dormitory is a large new building, heated by steam and lighted by electricity. It is very conveniently arranged. For a description of the laboratories, reference must be made to the statements of the several departments to which they belong. All the buildings are supplied with water brought from excellent springs.

The college grounds contain some thirty-five acres, and are well set in grass. The walks, drives and young plantations promise in time to make them exceedingly attractive.

Farm.

The farm consists of 338 acres of fine, slightly rolling land, nearly all of which is under cultivation or used as pasture. A small portion through which runs a creek needs under-draining, and this serves for the present to illustrate the morning lectures upon this subject. The farm herd is made up of three breeds, viz.: Shorthorns, Holsteins and Jerseys. These, with the optical lantern and fine collection of slides on hand, offer abundant facilities for illustrating the lecture courses. Barns for dairy animals, horses and young stock, with silo, granaries and out-houses, comprise the farm buildings. These are equipped with hay carriers, engine, feed cutter and grist mill, wagon and platform scales, together with hay-ricker, mowers, tedders and the many implements usually on a farm. The entire farm is considered a laboratory in its full sense, to broaden and develop in the student a desire to investigate the mysteries of nature.

Admission.

The age for admission is fifteen (15) years. Exception is made in the case of two or more brothers—the younger may be somewhat under the required age.

Applicants for admission to the Freshman class must be proficient in English grammar, physical geography, history of Virginia and United States, arithmetic, and algebra to equations of first degree.

For entrance into sub-collegiate class a fair knowledge of elementary grammar, geography, history, and arithmetic is required.

The students are organized into a battalion of two companies.

The officers and non-commissioned officers of the organization are appointed by the President on the recommendation of the commandant of cadets.

Drills are held four times a week. All instruction is conducted according to the Infantry Drill Regulations, United States Army.

State Students.

An act of the General Assembly, relating to the college, has the following provision:

"A number of students, double the number of members of the House of Delegates, making two hundred, shall have the privilege of attending said college free of tuition, to be selected by the school trustees of the respective counties, cities, and election districts of said delegates, with reference to the highest proficiency and good character, from the free schools of their counties, or, in their discretion, from others than those attending said free schools."

The appointees must conform to the requirements as to age and preparation.

Faculty and Officers.

John M. McBryde, Ph. D., LL. D., President and Professor of Agricultural Chemistry.

John E. Christian, A. M., Professor of Mathematics and Civil Engineering.

James H. Fitts (Annapolis), Professor of Mechanical Engineering.

William B. Alwood, Professor of Horticulture, Entomology and Mycology.

Edward E. Sheib, Ph. D. (Leipsic), Professor of English, History and Political Economy.

Ellison A. Smyth, Jr., A. M., Professor of Biology.

Theo. P. Campbell, A. M., Adjunct Professor of Modern Languages.

William E. Anderson, Adjunct Professor of Physics and Electrical Engineering, and Director of Shops.

Robert C. Price, Adjunct Professor of General Chemistry, Mineralogy and Geology.

D. O. Nourse, B. S., Adjunct Professor of Agriculture.

John A. Harman (Second Lieut. Seventh U. S. Cavalry), Assistant Professor of Mathematics, Professor of Military Science and Tactics, and Commandant of Cadets.

Robert J. Davidson, A. M., Adjunct Professor of Analytical Chemistry.

E. P. Niles, D. V. M., Adjunct Professor of Veterinary Science.

R. T. Bray, Mechanical Engineer, Instructor in Wood Work.

W. N. Cunningham, Instructor in Iron Work.

W. W. Hurt, Instructor in Mathematics and Book-keeping.

Hon. John Gardner, Treasurer.

W. W. Hurt, Secretary of Faculty.

Alfred W. Drinkard, Librarian.

Kent Black, M. D., and W. F. Henderson, M. D., College Physicians.

Rev. G. T. Gray, Rev. R. H. Wilson and Rev. C. N. A. Yonce, Chaplains.

Agricultural Experiment Station.

The Experiment Station is made by law a department of the college and placed under the control of its Board of Visitors. The station is organized as follows:

Board of Control.

Capt. C. E. Vawter, Crozet; Hon. J. Thompson Brown, Brierfield; Maj. A. R. Venable, Jr., Farmville.

Station Staff.

J. M. McBryde, Ph. D., LL. D., Director; W. B. Alwood, Vice-Director, and Horticulturist, Entomologist and Mycologist; E. A. Smyth, Jr., A. M., Biologist; D. O. Nourse, B. S., Agriculturist; R. J. Davidson, A. M., Chemist; E. P. Niles, D. V. M., Veterinarian; R. H. Price, Assistant Horticulturist; T. L. Watson, Assistant Chemist.

The entire farm is devoted to experimental purposes. Several hundred plats are permanently set apart for field experiments. Tests of more than two hundred varieties of vegetables and six hundred varieties of fruits are annually made. Numerous scientific investigations, including chemical analyses, study of injurious fungi and insects and the value of fungicides and insecticides, microscopic examinations of diseased tissues, culture of pathogenic bacteria, experiments in stock feeding, etc., are now in progress.

The tests and investigations of the station are freely used to illustrate and enforce the principles taught in the class-room.

STATE FEMALE NORMAL SCHOOL, FARMVILLE, VA.*Board of Trustees.*

Gen. William B. Taliaferro, President, Ware Neck, Gloucester.
 John L. Buchanan, LL. D., Vice-President, Ashland.
 Prof. L. R. Holland, Salem.
 George O. Conrad, Esq., Harrisonburg.
 H. H. Harris, LL. D., Richmond city.
 Rev. James Nelson, D. D., Richmond city.
 Col. J. P. Fitzgerald, Farmville.
 Hon. William Lovenstein, Richmond city.
 Hon. W. P. Dupuy, Roanoke city.
 Robert Turnbull, Esq., Lawrenceville.
 Hon. S. S. Wilkins, Bird's Nest, Northampton county.
 Hon. John E. Massey, Superintendent Public Instruction, *ex-officio*, Richmond city.
 Hon. J. L. M. Curry, LL. D., Richmond city.
 K. C. Murray, Esq., Norfolk.
 Judge Asa D. Watkins, Secretary and Treasurer, Farmville.

The State Female Normal School was established by act of Legislature, session 1883-'4, for the education of white female teachers for the public free schools of the State of Virginia. The law creating it fixed its location at Farmville. Farmville is a healthful and pleasant town of between two thousand and three thousand inhabitants.

The present buildings can now accommodate about one hundred persons as boarders. In addition, students desiring to do so are permitted to board in the town with families approved by the principal.

The class-rooms are new and commodious, and the chemical and physical apparatus sufficient for the present work.

A small but well-equipped laboratory affords students an opportunity for qualitative analysis.

One hundred and twenty-eight students can be received on State account. These, of course, must support themselves, but they pay no tuition or other

school fees. These State students are either the regular representatives of counties and cities, or they are persons received as substitutes in place of such representatives as fail to come. All State students are required to sign a pledge that they will teach at least two years in the public schools of Virginia after leaving the Normal School; although, of course, whilst thus teaching, they will receive pay for their services like other teachers.

State students must be recommended by the superintendent of schools of their respective counties or cities after an examination as to their attainments.

All applicants must be at least 16 years of age, of sound health, vigorous intellect and good character.

Medical attention is given free of charge by a physician chosen and paid by the Board of Trustees.

The first session began in October, 1884, since which time it has been in continuous operation, except during the usual summer vacations.

The main object of the school is to fit students for teaching. Students having completed the regular course will receive the degree of "Licentiate of Teaching." Graduates in the professional course will receive a diploma. Students in special courses will receive a certificate of proficiency in the studies completed.

Faculty of Instruction.

John A. Cunningham (principal), Psychology and History of Education.

Celestia S. Parrish, Mathematics and Astronomy.

Madeline L. Mapp, Vocal Music and Elocution.

Martha W. Coulling, Drawing and Calisthenics.

Virginia Reynolds, Physiology and Geography.

Bessie V. Gaines, Physics and Chemistry.

Minnie V. Rice, Latin and German.

Mary Frederica Stone, Grammar and Arithmetic.

Clara E. Vickroy, A. B., History and English Literature.

Myra E. Compton, Mathematics and Astronomy (during absence of Miss Parrish on furlough).

Number of students 1891-'92, 203.

Domestic Department.

Mrs. Portia L. Morrison, Head of the Home.

Miss Sarah P. Spencer, Assistant.

Dr. Peter Winston, Attending Physician.

WILLIAM AND MARY COLLEGE.

"William and Mary" is much the oldest college in the State, and is the second in the United States. It was chartered in 1693. It is located at Williamsburg, on the highest land between Richmond and Old Point Comfort. The removal of the capital from Jamestown to the "Middle Plantations" took place in 1699. Several years before this time the college had been established on its present site at Williamsburg. The college owed its existence to royal favor; the King having made a college and a city without reference to students or population. It lent the Continental Congress \$50,000 in gold, and was never paid by State or Union. It was sacked by the soldiery in 1862, and until this year no indemnity was allowed. After making a gallant effort to rise from its

ashes without State or Federal favors, it sank and closed in 1881. (Was it strange that it should do so?) Seven years later the State came to its assistance and made an appropriation of \$10,000. It reorganized and opened with every appearance of success. It has succeeded, having last year 182 students. The Federal Government now does it justice, and it will receive \$64,000; and the colonial college, the Alma Mater of so many great, learned and distinguished men, again takes its place among the colleges of the State with equal chances of success.

State students pay \$10 per month for all expenses.

Its officers are as follows:

Lyon G. Tyler, President.

B. S. Ewell, President Emeritus.

L. B. Wharton, Professor of Languages.

T. J. Stubbs, Professor of Mathematics.

V. F. Garrett, Professor of Natural Science.

J. L. Hall, Professor of English.

H. S. Bird, Professor of Pedagogics.

J. H. Moss, Assistant Professor of Languages.

H. B. Smith, Treasurer.

R. L. Spencer, Steward.

R. E. Braxton, Janitor.

The college buildings have been three times burned—viz., in 1705, in 1859, and in 1862. The first was accidental by the French troops under Lafayette, and was rebuilt by Louis XVI. out of his private funds. The college has now in its bi-centennial year, 1893, over two hundred (200) students. It is the oldest college in the United States except Harvard University.

INSTITUTION FOR THE DEAF, DUMB AND BLIND.

The State Institution for the Deaf, Dumb and Blind is located at Staunton. The school session opens on the first of September and closes the second Wednesday in June. There is an aggregate of one hundred and thirty-one (131) pupils, classified as to sex and department as follows: Deaf and Dumb—males, 47; females, 46. Blind—males, 24; females, 14. Total, 131. In the Deaf-Mute Department there are seven regular classes, graded from the seventh up to the first class. The deaf child, upon admission, enters the seventh class, and proceeding by regular annual promotion, finishes his course in the first class. The pupils are taught the regular English course, and many other things which are not always taught to pupils possessing all their faculties. Articulation and lip-reading, painting in oil, and free-hand and crayon drawing are also taught. The progress made in this school in all the classes is good.

In the Blind Department there are four teachers in the academic division (one of whom gives instruction in music), and two in the musical division. Instruction is given in spelling, defining, point-reading and writing, arithmetic, algebra, geometry, geography, history of the United States, history of England, history of France, physical geography, rhetoric, physiology, hygiene, natural philosophy and astronomy. In music, in this department, instruction has been given in vocal music, both solo and chorus, on the pipe organ and the reed organ, violin, guitar and brass instruments. They have a brass band and an orchestra, made up of pupils of this department. Besides the school, the daily session of which extends over five hours, they have shops for the boys and

a sewing room for the girls. To the deaf, instruction is given in the following trades: Carpentering, upholstering, cabinet-making, use of the planing machine and the lathe. These are all included in the work done in the carpenter shop, most of which is done by the boys, and is of a very creditable character. In the shoe shop, instruction in the art of shoemaking is given; all repairing of shoes worn by the children is done, and nearly all of their shoes are made. In the tailor shop, the clothing of most of the male pupils is made.

In the Goodson printing office (so called because it was first established with funds devised to the institution by the late John M. Goodson, Esq., of Norfolk), the art of printing is taught. From this office is issued weekly during the session a little paper known as the *Goodson Gazette*. Each of the above shops are under the direction of a foreman. The institution has no endowment outside the grounds and buildings upon which and in which it is located. The annual appropriation from the State for its support is \$35,000. In addition, there are the receipts for the board of pay pupils, and sale of products of the shops, the farm and garden.

The benefits of the school proper are free to all the deaf and blind of the State who are between the ages of seven and twenty-one; such as are not able to pay for board and clothing are admitted *free of expense for these items*; such as are able to pay for board and clothing are required to do so. The charge for residents of the State is \$130 for school term of forty weeks. For non-residents the charge includes tuition as well as board, and is \$200 for a school term of forty weeks.

This institution has an excellent reputation. The good it has done cannot be estimated, not only to the State in educating a most helpless and dependent part of the population, thereby enabling it to become self-sustaining, diminishing the number who might be left for the State to maintain, but from a humanitarian standpoint it is a great blessing. It gives sight to blind eyes and opens stores of knowledge to ears that have never heard the many voices by which nature leads the child of earth from nature up to nature's God.

The principal of this institution is Thomas A. Doyle, Esq., from whose interesting report to the Hon. John E. Massey the facts and figures of the above are taken.

MEDICAL COLLEGE OF VIRGINIA, RICHMOND.

This institution, one of the best in the South, was incorporated by the Legislature and receives an annuity from the State. The Governor appoints the Board of Visitors, and they are required to report to the Superintendent of Public Instruction.

Board of Visitors.

President, Judge W. W. Crump.

Daniel W. Lassiter, M. D., Petersburg.

Hon. John L. Marye, Jr., Fredericksburg.

Judge W. W. Crump, Richmond city.

Rev. J. J. Lafferty, D. D., Richmond city.

R. E. Moore, M. D., Wytheville.

Maj. S. J. C. Moore, Berryville.

Lewis Wheat, M. D., Richmond city.

Robert B. Berkeley, Esq., Farmville.

James B. McCaw, M. D., Richmond city.
 George B. Harrison, Esq., Boyce, Va.
 W. W. Douglas, M. D., Warsaw.
 William P. McGuire, M. D., Winchester.
 Herbert M. Nash, M. D., Norfolk.
 J. S. Pendleton, M. D., Marion.
 John B. Purcell, Esq., Richmond city.
 Wyndham R. Meredith, Esq., Richmond city.
 Tomlin Braxton, Esq., Manquin.
 Thomas H. Barnes, M. D., Elwood.
 John B. Cooper, secretary, Winder, Henrico county.

Faculty.

*J. S. Dorsey Cullen, M. D., Dean of the Faculty.
 Hunter McGuire, M. D., Emeritus Professor of Surgery.
 John S. Wellford, M. D., Professor of Diseases of Women and Children.
 *J. S. Dorsey Cullen, M. D., Professor of Surgery.
 William H. Taylor, M. D., Professor of Chemistry and Special Lecturer upon Medical Jurisprudence.
 Christopher Tompkins, M. D., Professor of Obstetrics and Diseases of the Puerperal State.
 Martin L. James, M. D., Professor of Practice of Medicine.
 Henry H. Levy, M. D., Professor of Physiology and Pathology.
 John N. Upshur, M. D., Professor of Materia Medica and Therapeutics, and Clinical Lecturer on the Diseases of Women.
 Lewis C. Bosher, M. D., Professor of General and Special Anatomy.
 Charles M. Shields, M. D., Clinical and Didactic Lecturer on Eye, Ear and Throat.
 John B. Cooper, Clerk.

Adjunct Faculty.

William Augustus Lee, M. D., W. A. Deas, M. D., Obstetrics and Diseases of the Puerperal State.
 Charles H. Chalkley, M. D., Chemistry.
 Armistead L. Wellford, M. D., Diseases of Women and Children.
 William P. Mathews, M. D., Surgery.
 Edward McCarthy, M. D., Materia Medica and Therapeutics.
 Edward C. Smith, M. D., Physiology and Pathology.
 Ramon D. Garcin, M. D., Practice of Medicine.
 Charles A. Blanton, M. D., Demonstrator of Anatomy and Curator of Museum.
 Charles H. Chalkley, M. D., Demonstrator of Chemistry.
 J. W. Henson, M. D., Anatomy.
 William T. Ford, Janitor.

Dispensary Staff.

J. N. Ellis, M. D., Superintendent.
 Practice of Medicine: F. S. Harker, M. D.; Prof. M. L. James, M. D., Consulting Physician.
 Diseases of Women and Children: M. W. Peyser, M. D.; Prof. John N. Upshur, M. D., Consulting Physician.

*Died March 22, 1898.

Diseases of Eye, Ear and Throat: O. F. Blankenship, M. D., J. W. Henson, M. D.; Charles M. Shields, M. D., Consulting Aurist and Oculist.

Diseases of Nervous System and Skin: Edward McCarthy, M. D.; Prof. M. L. James, M. D., Consulting Physician.

Surgery: J. N. Ellis, M. D.; *Prof. J. S. Dorsey Cullen, M. D., Consulting Surgeon.

Degree of Doctor of Medicine conferred on fourteen.

VIRGINIA NORMAL AND COLLEGIATE INSTITUTE, PETERSBURG, VA.

The Virginia Normal and Collegiate Institute was founded by an act of the General Assembly March 6, 1882, for the higher education of the colored youth of the State, and with special reference to the training of teachers.

The act of incorporation appropriated \$100,000 of the proceeds of the sale of the Atlantic, Mississippi and Ohio Railroad for the erection of suitable buildings, and \$20,000 annually for its support. The annuity has since been reduced to \$15,000.

Under the provisions of the charter the Governor appointed, early in the year 1882, a commission to select and purchase a site. The commission reported in favor of Fleet's farm, near the city of Petersburg, which was purchased in the spring of 1883.

The corner-stone of the main building was laid July 4, 1883, with the usual Masonic ceremonies, and in October of the same year the institute was opened for the admission of pupils.

Three departments—Academic, Normal and Preparatory—were organized the first year, and have been in successful operation until the present time. The College Department sent out its first graduate in 1889.

The Legislature of 1885-'86 appropriated \$32,000 for the completion of the building.

Two appropriations of \$10,000 each of unexpected annuity have since been made for the same purpose.

The main building was not occupied until the summer of 1888.

The building is of brick, trimmed with granite and galvanized iron. In style the structure is Romanesque, with a decided touch of the prevalent Queen Anne. The extreme length along the front from east to west is 367 feet, and the width through the centre building is 225 feet. The centre building has a front of 108 feet, and, including the mansard roof, is five stories in height. On the first floor of the centre building are situated the president's office, two reception-rooms, ten class-rooms, the dining hall, 81x91 feet, the pantries, larders, store-room, kitchen and laundry. On the second floor are the library and reading-room, professors' and tutors' rooms, some dormitories and the assembly hall and chapel, 84x91 feet. The fifth, or mansard story, is a lofty observatory and clock tower. The school departments proper are located in the wings, the males occupying one side and the females the other. There are five class-rooms in each department, ten in all, affording accommodations for 500 pupils. Five large stairways afford easy access to, and furnish ample means of exit from all parts of the building. Heat is furnished by direct and indirect steam radiation, and the heating and ventilation are combined so as to render both more efficient. The building is lighted by gas from the city gas works of Petersburg.

*Died March 22, 1893.

Admission of Students.

No one shall be admitted into the institute under the age of fifteen years, or of bad moral character; nor shall a student from other institutions be allowed to matriculate unless he can show that he is not, at the time of application, under censure.

Any student who shall in any way maltreat a new student shall be dismissed or otherwise severely punished.

No student shall play cards, dice, or engage in gambling of any kind, or associate with vicious or disorderly persons.

The use of tobacco in any form is prohibited.

No student shall drink or bring, or cause to be brought within the institute limits, or have in his room, or otherwise in his possession, any spirituous or intoxicating liquors, upon pain of being dismissed.

Number of students for 1891-'92, 432.

Faculty.

James Hugo Johnston, A. M. (president), Professor of Psychology and Moral Science.

James M. Colson, Jr., A. B., Professor of Natural Science.

Daniel B. Williams, A. M., Ph. D., Professor of Ancient Languages and Instructor in Methods.

Edward D. Scott, Professor of Modern Languages and Belles-Lettres.

Walter Johnson, Professor of Applied Mathematics.

Robert G. Chissell, A. B., Instructor Normal Department.

Mrs. Della I. Hayden, Lady Principal.

Miss Lucretia Campbell, Principal Normal Preparatory.

Miss Addie W. Poindexter, Normal Department.

Miss Hattie C. Johnson, Instructor in Instrumental Music.

U. S. G. Patterson, Instructor in Vocal Music and Band Leader.

Mrs. J. H. Hayes, Miss Ruth L. Brown, Teachers of Model School.

J. C. Robertson, David L. Hawks, C. D. Haynes, Emmet Fitzgerald, Student Teachers.

Hubert Hunter, Assistant Librarian and Drill Master.

Industrial Department.

C. W. Avant, Instructor in Carpentry.

William L. Holt, Instructor in Shoemaking.

Walter Johnson, Superintendent of Grading.

Mrs. J. H. Hayes, Instructor in Needle Work.

Miss M. E. Eubank, Assistant.

Mrs. Cora Z. Jones, Instructor in Cooking and Matron in Ladies' Department.

Mrs. M. C. Johnson, Matron in Boys' Department

Officers of the School.

J. H. Johnston, President.

C. J. Daniel, Secretary and Librarian.

H. B. Huckles, Treasurer and Business Manager.

R. D. McIlwaine, M. D., School Physician.

HAMPTON NORMAL AND AGRICULTURAL INSTITUTE, HAMPTON, VA.

The Hampton Normal and Agricultural Institute, Virginia, situated on the arm of Hampton Roads, two miles from Fort Monroe, was opened in 1868, and incorporated in 1870—the first permanent school for freedmen in the South.

The institution is aided by the State and Government, but is supported mainly by voluntary contributions.

Terms of admission: A knowledge of reading and writing, and of short and long division.

Tuition free to all. Board, etc., \$10 per month, payable monthly (except to night students, who work out the entire expenses), half in cash and half in labor; \$8 cash, and \$4 in work required of those under nineteen years of age. The first year is probationary. None under sixteen or over twenty-eight years need apply.

Industrial and normal education through self-help is the fundamental idea of the school. Trades and industries are taught and practiced.

It has now an attendance of 636, of both sexes, of whom 128 are Indians. Its work for Indians began in 1878, with seventeen ex-prisoners of war from Fort Marion, St. Augustine, Fla., brought there by Capt. Pratt, who had there inaugurated a wise and humane effort for their civilization.

Over 700 colored and over 300 Indian trained workers have been sent out among their people. The great majority of both are doing well; many as teachers, farmers, mechanics, laborers; are good examples. The majority are teachers and farmers and own good houses.

The Hampton School is, by its charter, undenominational, though Christian. It can look to no church for support, but to the people in general. It is not a Government school. It is aided by the State, but it is supported chiefly by voluntary contributions. Of its 138 Indian students, 120 are maintained by the Government as to board, clothing and transportation. Tuition for these, and all expenses for eighteen more, are met by private benevolence; also the tuition of colored students and all buildings and outfit. Student labor, while *bona fide* from the student's point of view, and of great material and moral advantage to him, is, much of it, non-productive in revenue and a tax on the resources of the school.

Faculty.

S. C. Armstrong, Principal.

Rev. H. B. Frissell, Pastor and Vice-Principal.

George Foster Peabody, Treasurer.

Albert Howe, Superintendent of Industries.

Francis C. Briggs, Business Agent.

Elizabeth Clark, Lady Principal.

Elizabeth Hyde, in charge of Academic Department.

Martha M. Waldron, M. D., Resident Physician.

Josephine E. Richards, in charge of Indian Department.

Treasurer's Department—Seven book-keepers and clerks.

Department of Religious Work—Pastor and two associates.

Medical and Sanitary Department—Dr. M. M. Waldron and two Trained Nurses, and Superintendent of Diet Kitchen.

Department of the "Southern Workman," and other Editorial Work—S. C. Armstrong, Helen W. Ludlow, Alice M. Bacon, Cora M. Folsom.

Academic Department—Miss Elizabeth Hyde, in charge of all but Indian School.

Normal School.

Ten teachers of Senior Class—36 students.

Twelve teachers of Middle Class—93 students.

Twelve teachers of Junior Class—157 students.

Shellbanks Night School (16 students).

Miss Abby C. Clapp, Mr. Henry Jordan.

Whittier Day School (300 children).

Misses Susan Showers, Stella Hayes, Emily Viets (Kindergarten), Harriet Howe (Cooking).

Indian School (80 students).

Including all Indians not in Normal or Night School, with seven teachers.

General Teachers.

Agricultural Science—Messrs. Albert Howe, J. S. West, C. L. Goodrich.

Free-Hand Drawing—Miss F. P. Pond.

Mechanical Drawing—Mr. F. L. Small.

Vocal Music—Misses Elizabeth Cleaveland, Edith Armstrong, Mr. F. G. Rathbun (also Instructor of Band).

Gymnastics (Swedish)—Miss G. Howes, in charge; Miss Edith Armstrong, Assistant.

Heads of Industrial Departments.

Mr. Albert Howe, Farm and General Manager of Industries; Miss Elizabeth Clarke, Lady Principal; Miss Elizabeth Hyde, Head of Normal Department, etc.; Miss Josephine Richards, Head of Indian Department.

In Charge of Special Departments.

Mr. H. S. Thompson, Huntington Industrial Works; Mr. Frost, Huntington Industrial Works; Mr. Lynch, Huntington Industrial Works; Mr. F. L. Small, Technical Department; Mr. G. Vaiden, Boiler and Steam Plant; Mr. King, Machine Shop; Mr. Sugden, Repair Shop; Mr. LaCrosse, Paint Shop; Mr. Goodrich, Greenhouse; Mr. Betts, Printing Office; Mr. Jones, Knitting Department; Mr. George Davis, Farm; Mr. Corson, Farm Shop; Mr. Milton, Farm Shop; Mr. Baker, Tin Shop; Mr. Gaddis, Harness Shop; Mr. Smith, Shoe Shop; Mr. Williams, Tailor Shop; Miss Galpin, Girls' Industrial Room; Miss Forsythe, Dressmaking; Mr. Park, Girls' Carpentry; Miss Viets, "Sloyd"; Mrs. Gore and Mrs. Andrus, Teachers' Home; Mrs. Seymour, Indian Department, Sewing; Miss Townsend, Indian Department, Housekeeping; Miss Booth, Indian Laundry; Miss Grace Showers, Matron; Miss Emily Austin, Abby May Home; Miss Julia Williamson, Assistant Abby May Home; Miss M. Williamson and Mrs. Tuttle, Cooking Classes; Mrs. Howland, Students' Laundry; Mrs. Woodward, Teachers' Laundry; Mrs. Titlow, Students' Boarding Department and Accounts; Miss S. K. Feltham, Girls' Garden.

Department of Discipline and Drill (Boys).

Capt. R. R. Moton, resident graduate in charge (subject to Faculty action).

Chief of Police for the School (holding commission from the State), Capt. W. O. Gibson; special sergeant of police, Capt. Allen Washington (both graduates).

Lieut. Charles F. Menoher, of the Artillery School at Fort Monroe, makes weekly visits of inspection and instruction. All students' rooms are reported on daily by janitors and once a week by school officers. Grounds are policed weekly.

The discipline of the Indian boys is largely administered through a council of five, nominated by them and approved by the commandant. Colored boys are disciplined at the office; serious cases dealt with by the Faculty, which meets twice a week, or by a court of fourteen cadet officers, after the regular army regulation. All the court or council decisions are subject to the approval of the Faculty.

Moral Supervision of Indian Boys in "Wigwam."

Miss C. Semple, Mr. F. D. Gleason.

Library and Reading-Room.

Miss L. E. Herron, Librarian; Miss Emily Herron, Assistant.

Department of Correspondence with ex-Students.

Miss A. E. Cleaveland (Poughkeepsie, N. Y.), Graduates' Correspondent.

Miss Cora M. Folsom, Correspondent of Returned Indian Students.

Miss A. L. Bellows, Distribution of Reading Matter.

The following institutions are incorporated and have Boards of Trustees, acting independently or under the control of ecclesiastical organizations from which they derive patronage and support:

Washington and Lee University, Lexington.

Randolph-Macon College, Ashland.

Miller Manual-Labor School, Crozet.

Hampden-Sidney College, Farmville.

Richmond College, Richmond.

Roanoke College, Salem.

Emory and Henry College, Emory.

Theological Seminary, Fairfax county.

Union Theological Seminary, Hampden-Sidney.

Martha Washington College, Abingdon.

Southern Female College, Petersburg.

Danville Female College, Danville.

Polytechnic Institute, New Market.

WASHINGTON AND LEE UNIVERSITY, LEXINGTON, VA.

The first charter of incorporation granted to an institution of learning, after the Colony of Virginia had become the State of Virginia, was that which incorporated the school which finally became the Washington and Lee University. The charter was granted in October, 1782, to Liberty Hall Academy, the lineal

successor of, and known until the War of the Revolution as The Augusta Academy, a school established in 1749 by Robert Alexander, one of the early settlers of the Valley of Virginia. The school was sustained by its tuition fees alone until 1796, when it obtained as its first endowment the sum of \$50,000 from George Washington, to whom the General Assembly of Virginia in 1784 had presented shares in two canal companies incorporated in Virginia—the Potomac Company and the James River Company. The latter formed the first endowment of this school.

The "Cincinnati Society," composed of the surviving officers of the Revolutionary War, decided in 1802 to dissolve the association and assign their funds to some benevolent object. The trustees of this institution thereupon appointed a committee to confer with the society, and the result was that the Cincinnati Society, influenced, as they declared, by the example of Washington, their leader, and by a desire to promote his patriotic purpose, appropriated the residue of their funds to Washington Academy.

This endowment amounted to more than \$25,000.

John Robinson, a native of Ireland, a trustee of the college, a soldier under Washington, filled with love and veneration for his virtues and a laudable zeal to further promote the noble purpose of the Father of his Country, in 1828 bequeathed to Washington College his whole estate, amounting to \$46,500.

Thus thrice endowed by the sages and patriots of the Revolution, the school located at Lexington, in the Valley of Virginia, near the interlacings of the head waters of the Shenandoah and the James rivers, amidst singularly beautiful and inspiring scenery and most salubrious climate, grew apace in usefulness and renown.

At the close of the Civil War, the college being without income or credit, borrowed money for the repair of the buildings on the private credit of members of the Board of Trustees.

On August 4, 1865, Gen. Robert E. Lee was elected president.

General Lee was formally installed president of Washington College October 2, 1865, a position which he held until his death, in 1870.

The General Assembly of Virginia in 1871 changed the name of the institution to its present corporate title, "The Washington and Lee University," blending the names of the great benefactor who had first placed the institution on a solid basis, and the president who had resuscitated it after the ravages of war. In the same year Gen. G. W. Custis Lee succeeded his father as president of Washington and Lee University.

Faculty and Officers (with date of appointment).

George Washington Custis Lee, LL. D., 1871, President.

*James Jones White, A. M., 1852, Corcoran Professor of Greek.

Alexander Lockhart Nelson, M. A., 1854, Cincinnati Professor of Mathematics.

Carter Johns Harris, A. M., LL. D., 1858, Peabody Professor of Latin.

Charles Alfred Graves, M. A., B. L., 1875, Professor of Common and Statute Law.

James Albert Harrison, Litt. D., LL. D., 1876, Professor of Modern Languages and English.

Sidney Turner Moreland, M. A., C. E., 1880, McCormick Professor of Natural Philosophy.

James Addison Quarles, D. D., LL. D., 1886, Professor of Moral Philosophy.

William George Brown, B. S., Ph. D., 1886, Bayly Professor of General and Applied Chemistry.

Henry Donald Campbell, M. A., Ph. D., 1887, Robinson Professor of Geology and Biology.

John Randolph Tucker, LL. D., 1889, Professor of Equity and Commercial Law and of Constitutional and International Law.

David Carlisle Humphreys, C. E., 1889, Thomas A. Scott Professor of Applied Mathematics.

Henry Alexander White, M. A., Ph. D., D. D., 1889, Professor of History.

Edward M. Schaeffer, M. D., 1891, Physical Director.

Malcolm Hartwell Arnold, A. B., 1890, Instructor in Latin.

Edwin Luther Green, 1890, Instructor in Greek and German.

Frank Alexander Nelson, A. B., 1891; Harry Waddell Pratt, 1891, Instructors in Mathematics.

William Reynolds Vance, 1891, Instructor in English.

John Lyle Campbell, B. L., 1877, Clerk of the Faculty.

Benjamin Franklin Wade, 1890, Librarian.

Chaplains.

Rev. J. B. Taylor, D. D., Pastor Baptist Church.

Rev. F. J. Prettyman, Pastor Methodist Church.

Rev. R. J. McBryde, D. D., Pastor Episcopal Church.

Rev. T. L. Preston, D. D., Pastor Presbyterian Church.

Number of students, 242.

Private liberality has increased the endowment to \$628,446.18, yielding an annual income of \$36,600.86.

The buildings are ample and well appointed; with fine library and museum with four distinct cabinets. The chapel is a memorial of Gen. R. E. Lee, and in the basement is the recumbent statue of its greatest president.

RANDOLPH-MACON COLLEGE, ASHLAND, VA.

Ashland is immediately on the Richmond, Fredericksburg and Potomac Railroad, sixteen miles north of Richmond, upon the most elevated plateau between that city and Washington, D. C. The location is distinguished for healthfulness and accessibility. On this account the village of Ashland was originally incorporated as a summer resort, and is much frequented during the heated term, while the comparative infrequency and brief duration of severely cold weather makes it especially favorable to health and comfort during the college session. Six passenger trains each way stop at the college daily. Telegraphic connection with all parts of the country. Mail five times a day.

By an act passed by the General Assembly of Virginia on the 3d day of February, 1830, Randolph-Macon College came legally into existence under the following trustees: Of the clergy, Rev. John Early and twelve preachers; of the laity, Hon. John Y. Mason and sixteen prominent laymen.

For presidents the college has had the services of the following distinguished men: Rev. Stephen Olin, D. D., from 1832 to 1838; Landon C. Garland, A. M., from 1838 to 1846; in this period Mr. Garland resigned the presidency, and Dr. William Capers, of South Carolina, was elected, but he declined and Mr.

Garland was re-elected; Rev. William A. Smith, D. D., from 1846 to 1866, a faithful service of twenty years; Thomas C. Johnson, A. M., from 1866, upon the reorganization of the school after the war, to 1868, when the institution was removed to Ashland; Rev. James A. Duncan, A. M., DD., from 1868 to 1877, and this eminent and beloved man was the only president of the college that died while filling the office; Dr. W. W. Bennett was the next president, and Dr. W. W. Smith succeeded Dr. Bennett, and is the present president.

Grounds and Buildings.

The campus contains about twelve acres, and is a fine grove of oaks and maples. During the past few years it has been thoroughly drained; gravel walks have been laid out, and many other improvements have been made.

To procure water free from any possible contamination, a tube-well has been sunk to the depth of eighty-five feet, and a cistern holding 7,000 gallons has been constructed for those who prefer cistern water.

To the eight dormitories, the Pace lecture-room building, the Duncan memorial chapel, the hall of the literary societies, and the gymnasium, has been added the science hall, for lecture-rooms and laboratories for practical work in physics and biology.

The observatory contains a five-inch equatorial refracting telescope, a transit instrument, sextant, etc.

All students preparing for the ministry are exempt from tuition fees, but are required to pay their matriculation and medical fees. Such students are required to bring the recommendation of the quarterly conferences of the pastoral charges to which they belong, and to give bonds for the payment of their tuition fees in two years after leaving college, conditioned on their failure to devote themselves to the work of the ministry. The sons of itinerant ministers of the Virginia and Baltimore Conferences of the Methodist Episcopal Church, South, are also educated without charges for tuition.

Faculty.

William W. Smith, A. M., LL. D., President.

William A. Shepard, A. M., Ph. B., Professor of Chemistry and Geology.

Robert Emory Blackwell, A. M., Professor of English and French.

Royall Bascom Smithey, A. M., Professor of Pure and Applied Mathematics.

Richard M. Smith, M. A., Ph. D., Professor of Greek, Hebrew and German.

John A. Kern, D. D., Professor of Moral Philosophy and Biblical Literature.

John L. Buchanan, A. M., LL. D., Professor of Latin.

Bishop J. C. Granbery, A. M., D. D., Lecturer on Homiletics and Pastoral Theology.

Arthur C. Wightman, A. M., Ph. D., Adjunct Professor of Physics and Biology.

De la Warr B. Easter, A. M., Instructor in English, French and Greek.

Homer H. Sherman, Instructor in Mathematics.

W. J. King, Director of the Department of Physical Culture.

Officers.

Richard Irby, Secretary and Treasurer.

Z. B. Herndon, M. D., College Physician.

Rev. C. F. Sherrill, Chaplain.

Number of students for 1891-'2, 130.

A peculiarity of this college, differing from any other in the State, is the ownership and control by its trustees of two splendid academies and a woman's college, to-wit: Randolph-Macon Academy at Bedford City, with elegant and extensive buildings and grounds, costing in money and land grants \$100,000, with A. M. Hughlett, A. B., and E. Sumpter Smith, University of Virginia, joint principals; Randolph-Macon Academy at Front Royal, with magnificent grounds and buildings, costing \$100,000—B. W. Bond, D. D., principal; and the splendid Randolph-Macon Woman's College at Lynchburg, costing \$225,000, ready for students for 1893, with W. W. Smith, A. M., LL. D., president. All the appliances and arrangements of this last institution are on the best and most approved modern plans, and the same courses of instruction and degrees given young women that are given young men by the parent college.

THE MILLER MANUAL-LABOR SCHOOL OF ALBEMARLE.

Samuel Miller.

Samuel Miller was born in almost abject poverty in a log cabin upon the top of one of the ragged mountains of Albemarle county, Virginia, on the 30th day of June, 1792.

While yet a boy he made his first money by picking wool from the briars left by straying sheep on the very ground where now stands his grand gift to Albemarle county; and some of the very bricks that now crown one of the best-equipped and best-built machine shops devoted to industrial training in all this wide country he assisted in making at ten cents a day.

Mr. Miller received at Batesville, Va., a good common-school education. For several years he taught school near the place of his birth. He had an elder brother named John, who, in early life, moved to Lynchburg, Va., where he became an intelligent and shrewd merchant. After he was well started in life he took his brother Samuel with him. They continued their mercantile business in Lynchburg until the elder brother died, in 1841, leaving to Samuel the bulk of his fortune, which amounted to about \$100,000. It was the cherished idea of these two brothers in their youth to amass a large sum of money for the purpose of establishing in their native county a charitable institution for the education of poor children. After John Miller's death, Samuel Miller, with their united fortunes, moved on with a steady, unwavering purpose to the accomplishment of this cherished dream of their youth, until he became one of Virginia's greatest benefactors. It is rather a remarkable fact that what was left to Samuel Miller in 1841 by his brother would have amounted at compound interest to the sum that he wished in 1869 to leave to the Albemarle school

On the first day of April, 1859, Mr. Miller made his will, and by it established and richly endowed the Miller Manual-Labor School of Albemarle.

Samuel Miller died March 27, 1869, at his residence in Campbell county, Va., aged 76 years 8 months and 3 days. After considerable litigation an act of compromise passed the Virginia Legislature, approved February 24th, 1874, establishing The Miller Manual-Labor School of Albemarle as provided for in the 25th clause of Mr. Miller's will.

The Governor, the Attorney-General, the Superintendent of Public Instruction and the Second Auditor of Virginia constitute the board of trust of the "Miller Fund." Of this board the Second Auditor is secretary. It is the duty of the board of trust to hold the principal; to re-invest all bonds when they

mature; to sell all bonds that may be of doubtful solvency, and to re-invest the proceeds of such sales in good bonds; to collect all interest when due; to hold the same subject to proper draft from the county court of Albemarle to meet the expenses of the school.

The endowment is over thirteen hundred thousand dollars (\$1,300,000); annual income about seventy-three thousand dollars (\$73,000).

The school trustees of the county of Albemarle and of the city of Charlottesville meet at the school on the first Tuesday after the first Monday in January and July. Of this meeting the county superintendent of schools is chairman and the clerk of the county court secretary. At these meetings those children are selected and designated who come under the requirements of Mr. Miller's will. From the children who are thus selected and designated the county court appoints the pupils of the school. It is to be noted that the children must be residents of the county of Albemarle, that the boys must be between 10 and 14, and the girls between 8 and 12 years of age.

In October, 1878, the first pupils were admitted into the school. The school began with twenty pupils.

Number of pupils for 1881-'2: Boys, 173; girls, 93.

The school is managed and controlled through the agency of the county court of Albemarle. The court appoints "annually two intelligent, respectable and well-educated gentlemen," whose duty it is to select and employ, whenever necessary, competent and suitable teachers for the school (subject to the approval of the county court), and to visit the school quarterly, examine into its condition minutely, and make written report thereof to the court.

The act of Assembly provides that "the charges and expenses attending the establishment and support of said school, including the purchase of said land (should any be purchased), the erection of buildings, the feeding, clothing and education of the pupils, the charges for medical attendance upon them, and everything incident thereto and connected with the said school, shall, when examined, allowed and certified by the said county court of Albemarle county, and approved by the Board of Education, be paid by the said Board of Education out of the income and profits of the trust fund created by the 25th clause of the said will.

The farm, grounds and buildings are ample. The lawn contains twenty acres. The main building cost \$140,000 and its equipments \$60,000. The machine shop building cost \$30,000 and its equipments \$30,000. The buildings for the three primary departments cost \$5,000 each, stables and silos \$10,000, conservatory \$2,000, chemical laboratory \$2,000, its equipment \$2,500; all other buildings about \$25,000.

Officers of Government.

C. E. Vawter, Superintendent.

Mrs. V. P. Means, Matron Boys' School.

Mrs. M. J. Calhoun, Principal Girls' School.

Dr. J. D. Smith, Physician.

C. T. Jordan, Secretary.

Instructors.

J. W. Calhoun, Jr., Teacher of English.

E. G. Taylor, Teacher of Book-keeping.

W. J. Humphreys, Teacher of Mathematics, Physics and Mechanics.

William H. Fenton, Teacher of Languages.
 Percy H. Walker, Teacher of Chemistry.
 J. D. Tinsley, Teacher of Biology and Agriculture.
 J. W. Mayo, Instructor in Metal Work.
 Charles Hancock, Instructor in Wood Work.
 L. C. Gardner, Instructor in Forge and Foundry Work.
 Miss Evelyn Hill, Teacher Boys' Primary Department.
 Miss Lena H. Tucker, Teacher Boys' Primary Department.
 Mrs. M. N. Quinby, Teacher Boys' Primary Department.
 Miss Mary J. Moser, Teacher of Music and Stenography.
 Miss Bessie P. Fleet, Teacher Girls' School.
 Miss Marion C. Glassell, Teacher Girls' School.
 Miss Emily Strayer, Teacher Girls' School.

Managers, Foremen and Assistants.

J. W. Smith, Manager Fuel, Light and Water Department.
 D. C. Carver, Manager of Laundry.
 W. G. Moran, Manager of Garden.
 A. J. Craven, Manager of Farm.
 John F. Yancey, Manager of Subsistence Department.
 L. T. Fulcher, Assistant in Metal Work.
 C. L. Gilbert, Assistant in Forge and Foundry Work.
 Howard S. Harris, Assistant in Wood Work.
 R. M. Lipscomb, Assistant in Charge of Tool-Room.
 Walter Grinstead, Assistant in Charge of Boiler-Room.
 Vollie McDaniel, Assistant in Charge of Electric-Light Plant.
 Miss Ida Myers, Assistant in Dressmaking.
 Miss Lizzie Echard, Assistant in Dressmaking.
 Miss Mamie Beale, Assistant in Boys' Primary Department.
 Miss Lelia Beale, Assistant in Boys' Primary Department.
 Mrs. N. P. Johnson, Assistant in Boys' Primary Department.

HAMPDEN-SIDNEY COLLEGE,

Founded in 1775 and chartered in 1783, is located in Prince Edward county, Virginia, on a parcel of ninety-seven acres of land, donated by Peter Johnston, the ancestor of many distinguished Virginians. Its post-office is Hampden-Sidney, and its depot town Farmville, on the Norfolk and Western Railroad. Its locality is proverbially one of the most healthy in the Commonwealth, only three students having died here in the 117 years of its history.

Its Patriotic History.

In May, 1783, the Legislature of Virginia granted a charter of incorporation to John Blair Smith, Patrick Henry, William Cabell, Sr., Paul Carrington, Robert Lawson, James Madison, John Nash, Nathaniel Venable, Everard Meade, Joel Watkins, James Venable, Francis Watkins, John Morton, William Morton, Thomas Reade, William Booker, Thomas Scott, Sr., James Allen, Charles Allen, Samuel Woodson Venable, Joseph Parke, Richard Foster, Peter Johnston, Rev. Richard Sankey, Rev. John Todd, Rev. David Rice and Rev. Archibald McRoberts, and their successors, under the name of "The

President and Trustees of Hampden-Sidney College," which, to the present time, has proved sufficient, and is believed to be the oldest, if not the only, act of incorporation in Virginia which for more than one hundred years has not needed amendment or enlargement.

A Military Company.

In 1776, soon after the college was opened for the first time, a military company was formed from its students. This company was placed under the command of Mr. John Blair Smith, then one of the tutors of the college, and afterwards its president; was marched to Williamsburg and offered to the Governor of the State. Again, in 1781, when Cornwallis was pushing Green from North Carolina into Virginia, Mr. Smith (afterwards president) hastened to join the volunteers assembled to repel the advance of the enemy. In the war of 1812 John Kirkpatrick, afterwards the distinguished preacher and orator of Cumberland county, led forth the sons of Hampden-Sidney (from which he had lately graduated) to aid in the defence of Norfolk against the British. In 1861, Capt. J. M. P. Atkinson, then president, at the head of the "Hampden-Sidney boys," was mustered into the service of Virginia. This company bore a conspicuous part at the battle of Rich Mountain, under the lamented Pegram.

Distinguished Presidents.

Among the distinguished presidents of Hampden-Sidney may be mentioned Archibald Alexander, D. D., afterwards the founder of Princeton Theological Seminary.

The college is unsectarian in its organization and instruction, and was founded for the purpose of giving thorough education under Christian surroundings to young men in the eastern part of the State. The area of its patronage has, however, greatly extended. Last session there were present 155 students from sixteen States and one foreign country. The college retains the curriculum and demands a high standard for graduation.

Its Faculty at present consists of Richard McIlwaine, A. M., D. D., President; Walter Blair, A. M., D. L.; James R. Thornton, A. M.; Henry C. Brock, B. Lit.; John B. Henneman, M. A., Ph. D.; J. H. C. Bagby, M. A., M. E.; C. W. Sommerville, A. B.; R. R. Jones, A. B.

The subjects taught are moral philosophy, Bible history, physical science, Latin, Greek, mathematics, German, French, English, historical and political science, logic and the history of philosophy.

RICHMOND COLLEGE, RICHMOND, VA.

Grounds and Buildings

The premises cover thirteen acres, just inside the western limits of the city, only two squares from and on a level with the site of the Lee Monument, and less than half a mile from the State Fair-Grounds and Exposition buildings. The lots around the college property are being rapidly built up with first-class private residences. The main building occupies the centre of the campus. From it the ground falls on all sides to the surrounding streets. There is an abundant water supply and a complete system of drainage. The dormitories are 18x14 feet, high-pitched, well-lighted, and ventilated by open fire-places. The lecture-rooms are ample in size, furnished with comfortable seats, and

well supplied with black-boards, maps, charts and apparatus. The south wing of the central building contains in the basement a physical laboratory; on the main floor a library hall erected to the memory of Dr. J. B. Jeter. The library of the college has its home in this spacious memorial hall. There are *eleven thousand four hundred volumes*. The reading-room is supplied with the best dailies, weeklies and monthlies. Above there is a museum and art gallery, a memorial to James Thomas, Jr. The halls for the two literary societies are 30x40 feet, and handsomely furnished. The chapel has a seating capacity of six hundred, reduced for ordinary use, by movable partitions, to two hundred and fifty. There is a new and handsome dining hall, with all needful appliances, and a gymnasium and bath-room, under the same roof.

More than thirty thousand dollars have recently been expended in improving and beautifying the already attractive premises of the college. To the imposing edifices heretofore erected have been added a handsome and convenient double cottage for students, with rooms *en suite*, and four delightful residences for professors, with pleasant surroundings.

Faculty.

B. Puryear, LL. D., Chairman.

Edmund Harrison, A. M., Professor of Latin.

H. H. Harris, M. A., LL. D., Professor of Greek.

F. W. Boatwright, M. A., Professor of Modern Languages.

John Pollard, A. M., D. D., Professor of English.

R. E. Gaines, A. M., Professor of Mathematics.

Charles H. Winston, M. A., LL. D., Professor of Physics.

B. Puryear, A. M., LL. D., Professor of Chemistry.

William D. Thomas, M. A., D. D., Professor of James Thomas, Jr., School of Philosophy.

Roger Gregory, B. L., Professor of T. C. Williams School of Law.

C. M. Hazen, Instructor in Physical Culture.

Number of students for 1891-'92, 204.

The trustees have an invested fund, the income from which is devoted to the assistance of young men who have proved themselves worthy, or who may be properly recommended, but who are not financially able to pay all college charges.

ROANOKE COLLEGE, SALEM, VA.

Roanoke College is fortunate in its location. The Roanoke Valley lies 1,100 feet above the level of the sea, is surrounded by mountains (Alleghany and Blue Ridge), rising 800 to 1,200 feet higher, and is deservedly famous for its beautiful scenery and healthful climate. Situated in this delightful region is Salem, the seat of Roanoke College. Salem has a population of nearly 4,000, which is increasing. The town is noted not only for the intelligence and refinement, but also for the high moral and religious tone of its population. There are here few of those temptations which often lead young men into habits of vice and dissipation; on the contrary, the influence of the college and community is such as to restrain them from improper indulgences and vicious habits.

The college buildings consist of a spacious main edifice, enlarged by wings; two three-story buildings, situated on the east and west of the main structure,

and a library building—total front, 313 feet. All of these are substantially built of brick, and are well adapted to the uses for which they were designed.

The college grounds contain about twenty acres, the grove in front of the buildings being very attractive. This grove is thickly set with a luxuriant growth of forest and ornamental trees, the whole being covered with a beautiful green sward. The campus annually attracts a large number of visitors.

Candidates for admission must present testimonials of good moral standing, or otherwise satisfy the faculty of their fitness to become students of the college. If from another college or an academy, the applicant for admission must bring a certificate of regular and honorable dismissal.

Visiting bar-rooms or billiard saloons at any time during the session is prohibited. Drinking ardent spirits at any time during the session, or bringing intoxicating liquors of any kind on the college grounds or into the rooms of students, is prohibited. Any student who shall become intoxicated shall thereby sever his connection with the college.

Faculty.

Julius D. Dreher, A. M., Ph. D., President.

S. Carson Wells, A. M., Ph. D., Professor of Mathematics and Astronomy.

Rev. William B. Yonce, A. M., Ph. D., Professor of Ancient Languages and Literature.

Rev. Luther A. Fox, A. M., D. D., Professor of Moral and Intellectual Philosophy and History.

Rev. F. V. N. Painter, A. M., Professor of Modern Languages and Literature.

William A. Smith, A. M., Professor of Chemistry and Physics.

Wythe F. Morehead, A. M., Professor of English Language and Literature.

Leonidas McReynolds, Instructor in Commercial Department.

Isaac W. Lamm, Instructor in Penmanship.

Herbert M. Smith, Tutor in Greek.

E. V. Cox and C. B. Cannaday, Tutors in Latin.

Number of students for 1891-2, 141; representing thirteen States.

In the past ten years the students have come from twenty States, Indian Territory, Mexico and Japan. Choctaw Indians have been coming to Roanoke for some twenty years, and recently the college enrolled sons of three members of the Imperial Privy Council of Japan, the first students from that country to enter a Virginia institution.

EMORY AND HENRY COLLEGE. EMORY, VA.

The main college building, which is a commodious brick edifice of the classic mould of its day, 150x45 feet, four stories high, is situated upon a commanding eminence in the campus, which embraces twenty-two acres of shaded and open lawn set in blue-grass, and contains a bold and gushing spring of the best water known in this land of celebrated waters. The campus, in addition to being a superb place for manly exercises, is also a vision of beauty which has an invigorating and refining effect upon all who dwell within it.

Healthfulness.

A retired and beautiful valley, 2,100 feet above the level of the sea, with mountains abounding in mineral water, with a climate greatly sought after by persons from the malarial sections, never yet invaded by miasmatic or pestilential diseases.

Freedom from Temptations.

The college owns the land for nearly a mile around it, and no one, not even a servant, may come upon the grounds unless adjudged to be a suitable person by the faculty.

Tuition fees are remitted in the following cases:

1. Young men giving satisfactory evidence of their intention to preach and regularly licensed by their respective denominations.
2. The minor sons of ministers of any denomination engaged in the regular work of the ministry and dependent upon that for a support.
3. The minor sons of superannuated or deceased members of the Holston Conference, Methodist Episcopal Church, South.

Students are prohibited, on penalty of dismissal, from having or using intoxicating liquors or deadly weapons, and from organizing or active membership in secret fraternities.

Among the alumni of this college were Gen. J. E. B. Stuart and Gen. William E. Jones.

Number of students for 1891-'92, 123.

Officers of the Board of Trustees.

George W. Palmer, Esq., President.

*Rev. E. E. Wiley, D. D., Treasurer.

Prof. George W. Miles, Jr., Secretary.

Rev. W. W. Pyott, Financial Agent.

Faculty.

Rev. James Atkins, M. A., D. D. (Emory and Henry College), President.

*Rev. E. E. Wiley, M. A., D. D. (Wesleyan University), Lecturer to Minister Students.

Rev. Edmund Longley, M. A. (Wesleyan University), Professor of French.

Rev. James A. Davis, M. A. (Emory and Henry College), Professor Emeritus of Natural Sciences.

George W. Miles, Jr., M. A. (Emory and Henry College and graduate of University of Virginia), Professor of Greek and English.

Samuel M. Barton, Ph. D. (University of Virginia), Professor of Pure and Applied Mathematics.

Charles E. Bishop, Ph. D. (University of Virginia and Ph. D. of University of Leipzig), Professor of Latin and German.

Rev. James Atkins, M. A., D. D., Professor of Mental and Moral Philosophy.

Joseph L. Jarman (graduate University Virginia), Professor of Natural Sciences.

Willoughby Reade, Professor of Elocution and Physical Culture.

Charles H. Shannon, Tutor in Greek and Latin.

J. H. Jennings, Tutor in Mathematics.

Officers of the Faculty.

Rev. James Atkins, Chairman.

Prof. George W. Miles, Jr., Secretary.

Prof. Willoughby Reade, Librarian.

J. H. Jennings, Assistant Librarian.

THEOLOGICAL SEMINARY OF THE PROTESTANT EPISCOPAL CHURCH IN THE DIOCESE OF VIRGINIA.

This institution, in a properly organized form, was opened in Alexandria in 1823. In 1827, after the erection of the first building, it was removed to its present site, a hill 250 feet above the tide of the Potomac, two and a half miles west of Alexandria, and seven miles in a direct line from Washington, overlooking both cities and the river. In February, 1854, a charter was granted by the Legislature of Virginia.

The present buildings are as follows:

1. The Library, erected in 1855, from a legacy of Mrs. Sophia Jones, of Virginia, and a gift of John Bohlen, Esq., of Philadelphia.
2. St. George's Hall, erected in 1856 by a lady of St. George's Church, New York. It contains students' rooms.
3. Aspinwall Hall, erected in 1858 by Messrs. William H. and John L. Aspinwall, of New York. It contains prayer hall, lecture rooms and students' rooms.
4. Bohlen Hall, erected in 1859 by John Bohlen, Esq., of Philadelphia. It contains the refectory and students' rooms.
5. Meade Hall, erected in 1860 by the alumni, as a memorial to Bishop Meade. It contains students' rooms.
6. The chapel, a convenient and beautiful building, erected in 1880, on the site of the former chapel, by alumni and friends in all parts of the country.
7. Wyman Hall, a commodious and completely equipped gymnasium, erected in 1883 by the contributions of many friends, largely of Mr. Samuel G. Wyman, of Baltimore. This furnishes ample opportunity for exercise in all kinds of weather.
8. The Chapel of the Good Shepherd, erected for the colored people, in 1883, by the contributions of alumni and others.
9. Whittle Hall, erected in 1889, by the Ladies' Aid and Missionary Societies, as a home for the parochial work of the neighborhood.

In addition to these are five houses for the professors, in different parts of the seminary tract. Within a few hundred yards of the seminary is the Diocesan High School.

The style of the post-office is: "Theological Seminary, Fairfax county, Virginia."

Qualifications for Admission.

Every person producing to the faculty satisfactory evidence of having been admitted a candidate for priest's orders, according to the canons of the Protestant Episcopal Church in the United States, may be received as a student in the seminary. All others may be admitted who shall produce a testimonial from their pastor, or, if without a pastor, from some presbyter, of religious and moral character, and of fitness for the ministry; and also satisfactory evidence of classical and scientific attainments.

Every candidate for admission to the seminary, if not a graduate of some college or university, must be able to translate and parse some Greek and Latin author, and stand a satisfactory examination on natural, intellectual and moral philosophy, in order to be admitted.

Tuition, room rent and all the principal articles of furniture are gratuitously furnished.

Faculty.

Rev. Joseph Packard, D. D., Dean.

Rev. Joseph Packard, D. D., Meade Professor of Biblical Learning; English Bible, including Introduction, Criticism and Exegesis.

Rev. Cornelius Walker, D. D., Professor of Systematic Divinity, Homiletics and Liturgics.

Rev. J. J. McElhinney, D. D., Professor Emeritus and Librarian.

Rev. Kinloch Nelson, D. D., Professor of Greek Language, New Testament Literature, Church Polity and Pastoral Theology.

Rev. C. E. Grammer, B. A., Professor of Ecclesiastical History and Canon Law.

Rev. Angus Crawford, M. A., Professor of Hebrew and Oriental Languages and Literature, and Apologetics.

Special lectures will be given on the prayer-book by Bishop Whittle.

Instruction in vocal culture is given by the Rev. Henry Dixon Jones, A. B. (Harv.).

Number of students for 1891-'2, 47; there is also a preparatory department, with three instructors and 17 pupils; total, 64.

UNION THEOLOGICAL SEMINARY, HAMPDEN-SIDNEY, PRINCE EDWARD COUNTY, VIRGINIA.

The seminary is situated at Hampden-Sidney, Prince Edward county, Virginia, seven miles from Farmville, on the Norfolk and Western Railway, with which it connects by daily stages. Telegraphic communication with all parts of the country is secured by telephone to Farmville. The post-office address of faculty and students is "Hampden-Sidney, Prince Edward county, Virginia," and of the treasurer, "Farmville, Va."

The seminary is under the care of the Synods of Virginia and North Carolina. The Board of Directors is composed of twenty-four members, twelve from each of the synods to which the board reports. The General Assembly of the Presbyterian Church in the United States also has a right of general superintendence; may advise and recommend, but not originate, measures for the management of the institution.

According to the constitution of the seminary, "any young man who is a communicant in any Christian church of evangelical faith, being a graduate of any respectable college, or presenting satisfactory testimonials of possessing such literary qualifications, especially in the languages, as would entitle him to enter the senior class in any such college, may be admitted to the privileges of the seminary."

Tuition, rooms and furniture (except bed-linen and towels, to be provided by the student) are supplied without charge. An annual fee of \$5, at the opening of each session, is the sole charge due to the seminary.

Faculty.

***Benjamin M. Smith, D. D., LL. D., McCormick Professor Emeritus of Oriental Literature.**

Thomas E. Peck, D. D., LL. D., Professor of Systematic Theology.

*Died March 14, 1893.

Walter W. Moore, D. D., LL. D., Professor of the Hebrew Language and Literature.

Charles C. Hersman, D. D., LL. D., Henry Young Professor of Biblical Literature and Interpretation of the New Testament.

Thomas Cary Johnson, D. D., Professor of Ecclesiastical History and Polity.
*———, Stuart Robinson Professor of the English Bible and Pastoral Theology.

Dr. Hersman, Chairman, 1892-'93.

Dr. Peck, Clerk of Faculty.

Number of students for 1891-'2, 69; from sixteen colleges in eleven States.

Condensed History.

This seminary was formally opened January 1, 1824, with one professor, John Holt Rice, D. D., and three students. Nearly fifty years before, in 1775, Hampden-Sidney College had been founded by the Presbyterians of Virginia, mainly for the purpose of rearing an educated ministry. The president of the college was also teacher of the students of divinity. In 1812, when the seminary at Princeton was founded, the Synod of Virginia reorganized its theological school as a department of the college, with the Rev. Moses Hoge, president of the college, as its professor.

In 1860 there were forty students in the seminary, but the civil war depleted the number, till, in 1864, but one was left. Moreover, the treasury had no income. In this emergency friends from Baltimore and New York came to the aid of the institution with contributions sufficient to support it for one year. In a short time the State resumed payment of interest on its bonds, and successful efforts were made to repair the loss of other investments, so that by 1869 the seminary was relieved from the embarrassment.

**MARTHA WASHINGTON COLLEGE AND CONSERVATORY OF MUSIC,
ABINGDON, VA.**

This school was opened thirty-one years ago, under the auspices of the Holston Conference of the Methodist Episcopal Church, South, for the purpose of affording girls and young ladies the opportunity of acquiring a broad and liberal education, combined with social culture and Christian influence. The development of a noble Christian womanhood is its object, from first to last. The results attained in the lives of its many graduates, adorning the various walks in life, confirm the high hopes of its founders. These graduates, far and wide, have added such lustre to their Alma Mater as to cause Martha Washington College to be celebrated and known as one of the best schools on the continent for the unfolding of female character.

The curriculum has been carefully formed with regard to the objects named.

Faculty.

Rev. S. N. Barker, President.

Charles C. Fisher, A. M., Latin, Mental and Moral Philosophy.

Mrs. Mary H. Barker, M. A., Lady Principal, Mathematics.

Mr. T. C. Reese, Natural Science.

Miss Alma Ellis, Modern Languages, Anglo-Saxon and Higher English.

Miss Kate Mitchell, History.

Mrs. L. Anderson, Primary Department.

Mrs. S. L. Faires, Business Department, Typewriting and Stenography.

Mrs. L. Reese, Elocution.

Miss C. Heiskell, Painting and Drawing.

Mrs. M. E. Millan, Matron.

Conservatory of Music.

Mr. F. J. Zusberg, Director, Piano-forte, Organ, Violin, Theory and Composition.

Miss Olive Dhu Owen, Voice Culture.

Mrs. C. E. Arnold, Misses M. E. Scales, M. Hull, O. Wood, Piano.

THE SOUTHERN FEMALE COLLEGE.

The Southern Female College is located at Petersburg. The city is connected with all parts of the country by the Norfolk and Western Railroad and the Atlantic Coast Line, which intersects this point. This college was incorporated in 1863 by act of Legislature. It was then in the hands of Williams T. Davis, the father of the present head, who devoted the best of his life to its up-building, his success being attested by the high standing of the college, which continues under the present management.

The buildings are of brick, only two stories high, so that there is no danger of fire. Fronting on the residence part of Sycamore street the buildings run back in a hollow square to grounds for pleasure and exercise. The boarding department is large and comfortable; chambers are well heated and well ventilated. All the college buildings are under one roof, so there is no exposure from inclement weather. The chapel will hold 200 students. The library is open to students without extra charge. The library is well selected and is in constant use by the students of the higher classes. A reading-room with a good supply of magazines enables the students to keep up with the best current literature.

The course of study is second to none in the South. There are three departments of study—primary, preparatory and collegiate—each under competent teachers.

Officers and Teachers.

Arthur Kyle Davis, A. M., English Literature, Modern Languages.

Samuel Clayton Starke, A. M. (Randolph-Macon College), Latin, Greek, Moral Philosophy.

Miss Elizabeth Lee Gaskins, A. B. (S. F. College), Mathematics, English Language.

Miss Martha Dunn Vaughan, A. B. (S. F. College and Vassar College, New York), Natural Sciences, History.

Samuel Clayton Starke, A. M. (Randolph-Macon College), Business Department.

Miss Nellie Leigh Steward, A. B. (S. F. College), Demonstrator in Physics and Chemistry.

Miss Emma Morton Bartlett, A. B. (S. F. College), Preparatory Department.

Mrs. Eva Laurie Pleasants (authorized pupil of Cappiani; endorsed by Archer, Morgan, Penfield, Van der Stucken and Gilchrist), Voice Culture with Conservatory Course.

Miss Henrietta Seay (pupil of F. Ch. Hahr), Piano, Organ, Harmony.

Miss Kate Pleasants, Vocal Culture, Chorus.

Miss Bettie Seay (pupil of F. Ch. Hahr), Piano, Organ.

Miss Katherine Emma Bradbury (Art Students' League, New York,), Drawing and Painting.

Arthur Kyle Davis (pupil of Willoughby Reade), Elocution, School of Expression.

Miss Margaret Whitehead, Physical Culture.

Mrs. W. T. Davis, Matron.

THE DANVILLE COLLEGE FOR YOUNG LADIES, DANVILLE, VA.

Board of Directors.

John R. Pace, President; R. W. Peatross, First Vice-President; James G. Penn, Second Vice-President; James E. Schoolfield, T. J. Talbott, T. N. Jordan, W. T. Sutherlin, B. F. Jefferson, Charles H. Conrad, J. R. Jopling, R. T. Bass, T. B. Fitzgerald, R. H. Sharp, Jr.; John L. Penn, Secretary; John N. Wyllie, Treasurer.

Instructors.

R. H. Sharp, Jr., Principal.

Mrs. R. H. Sharp, Jr., Lady Principal.

R. H. Sharp, Jr., M. A. (University of Virginia), Moral Philosophy, Natural Sciences and Mathematics.

J. T. Littleton, A. M. (Randolph-Macon College), Languages and Mathematics.

Miss Mattie J. Littleton, English, Latin and French.

Miss Carrie T. Guerrant, English—Primary Department.

Mrs. Lizzie M. Blackwell, Primary Department.

Carl E. Cranz, Piano, Organ and Theory of Music.

Miss Laura E. Babcock, Voice Culture and Piano.

Miss N. Dakota Guerrant, Piano.

Miss Sallie O. Blackwell, Piano—Primary Department.

Miss Virginia W. Stuart, Art Department.

Mrs. M. A. Eanes, Domestic Department.

Mrs. Sallie A. Barnes, Matron.

The college occupies an elevated position on upper Main street, commanding an extensive view of the surrounding country, with the Blue Ridge plainly visible.

The college edifice is T-shaped, built of brick and roofed with tin. A tower projects eight feet in front and extends sixteen feet above the roof. The building has a front of eighty feet and a depth of one hundred and twenty feet. It contains three stories above the basement. It is located in one of the most healthy, prosperous and rapidly-improving sections of the State, in a community noted for its wealth, enterprise and refinement.

Number of students for 1891-'92, 158.

The college was incorporated in 1881, under the auspices of the Methodist Episcopal Church, South.

POLYTECHNIC INSTITUTE, NEW MARKET, SHENANDOAH CO., VA.

Co-educational.

The admission of young ladies into the Polytechnic Institute has opened up to them opportunities for acquiring preparation for the great duties of life on as broad and liberal a plan as any presented in our Southern land. Not only are they allowed to move along the pathway of higher education, to breathe the classic air of college life, to pursue the studies of literature, philosophy, ancient and modern languages, the sciences and mathematics, but they are brought side by side under such influences and conditions as tend to qualify both for all the phases and responsibilities of the highest sphere of usefulness.

The course of study pursued in this collegiate department is thorough and progressive, and embraces all the branches usually included in the *curriculum* of American colleges. A high standard of scholarship and a good moral character are imperative requisites for graduation.

In conformity to a resolution passed by the trustees at a recent meeting, the degree of Master of Arts will be conferred upon such candidates only as submit to, and satisfactorily pass, the examinations given by the faculty of the institute.

The degree of A. B. is conferred upon students who have passed satisfactory examinations in all the branches embraced in the collegiate course.

The degree of Civil Engineer and a certificate of proficiency in special studies is also given under certain conditions.

Faculty.

W. H. Smith, A. M. (president), Mathematics and Natural Sciences.

Rev. R. H. Cline, A. M., Metaphysics, Ancient and Modern Languages.

To be supplied, Adjunct Instructor in Ancient Languages and English Literature.

Miss Jennie M. Cook (graduate of Female Seminary, Mt. Pleasant, N. C.), Music and Belles-Lettres.

Thomas Beardsworth, Adjunct Teacher of Music.

Miss Anna M. Henkel (graduate of Von Bora College, Luray, Va.), Art Department.

To be supplied, Telegraphy, Short-Hand and Type-Writing.

Number of students for 1891-'92, 68.

RELIGIOUS DENOMINATIONS.

No State, for its population, has better churches or more conservative, liberal, religious denominations than Virginia. The right to decide upon this most important question (the religious belief) is freely accorded to all, and religious persecution or oppression is unknown. Freedom of conscience is the acknowledged right of all, and no kind of religious faith that respects the laws of the land is interfered with. Virginia being a Christian State, the Christian Sabbath is kept by abstinence from labor by all, except when labor is absolutely necessary. There is seldom any violation of this law, although a large Hebrew population keep the seventh day also as the Sabbath, according to the Levitical law. These are principally in the cities, where there are handsome synagogues and large and influential membership of this race. Proselytes from Christianity to Judaism or from Judaism to Christianity are almost unknown. This body of the "chosen people" remains as distinct as in the days of the Pharaohs and Moses; although in all business matters they mingle with others of different faith, most cordially co-operating in all that affects the political and financial welfare of the State. They are law-abiding citizens, and are an important factor in the mercantile prosperity and growth of the cities of Virginia. The Protestant churches are the Methodists (under many subdivisions) and the Baptists, Presbyterians, the Episcopalian and Christian or Disciples, Lutherans, Friends, United Brethren, Dunkards, and in the cities the Salvation Army, with here and there one who claims to belong to the Christian Alliance. Of these the Methodist Episcopal Church South, the Protestant Methodist and the Methodist Episcopal Church (called Northern) and the United Brethren are one in doctrine, but different in church government; together they make the strongest religious denomination in the State.

The Baptists are the next in numbers, and, like the Methodists, widely diffused over the State. They have a college and several institutes of learning for males and females, and an educated ministry, and the influence of this active denomination cannot be estimated. In some sections—the mountain districts—there is a Baptist Church (the Primitive Baptists) commonly called "Hard-Shell Baptists." These have some usages that are in conflict with the general aggressive work of this denomination. They are anti-missionary, opposed to Sabbath schools, and make no effort to have an educated ministry. They are quite numerous in the mountainous portions of the State.

The Presbyterians are the next in numbers, and second to none in influence. They have a college and many high-grade schools, and an able and educated ministry. The Presbyterian Church is descended from the Scotch Church, and in the counties where the Scotch were the first settlers they are strongest.

The Protestant Episcopal Church is all over the State, but especially strong and influential in the cities, where they have handsome churches and regular,

well-attended services. There is also a weak branch called the Reformed Episcopal Church. The Episcopal Church is descended from the Colonial Established Church.

The Christians or Disciples, known in some sections as Campbellites, are a comparatively new denomination, but are growing in influence; have quite a good number of members in Tidewater Virginia. It is a growing church, and in doctrines similar to the Baptists. The denomination has a handsome church in Richmond, where it is equal to any in influence and good works.

The Lutheran and the German Reformed Churches have a membership mostly in the lower Valley and Southwest counties and the cities. The doctrines are similar to the Presbyterians. They have a college and several fine schools.

The Friends, commonly called Quakers, have only a few churches, but number in their membership some of the most influential families in the State. They are not growing nor spreading out, but are holding their own. They are strongest in the northern part of the State. They have a church in Richmond, Loudoun and Southampton.

The Dunkards or German Baptists are strongest in the Valley and in one or two Piedmont counties. They are a peculiar people, with church usages different from any other Christians.

The other denominations are comparatively small in numbers. The Salvation Army is at times at work in the cities among the outcast classes and that class found in all large cities outside the church. There are a few in Richmond and Norfolk.

COLORED PEOPLE.

The colored people of the State have separate churches of their own—in the country, comfortable buildings; in the cities, often magnificent edifices. The colored Baptists are largely in the majority in the State. There are three different organizations of colored Methodists; also, Presbyterians, Episcopalians and Catholics. They have ministers of their own race, and every opportunity of receiving all the training for a religious life that the whites have. There is a Baptist theological institute in Richmond entirely for colored young men, and a Baptist institute for young women, doing good work. There is every disposition to help this class of our population in all that can advance their religious interests. They are advancing and improving.

THE CITIES.

By Virginia law towns of over 5,000 inhabitants are entitled to be incorporated as cities, with corporate powers, government and courts separate from the counties in which they are situated, and are not liable to taxation for any county purposes.

The following are the legal cities of Virginia: Richmond, Norfolk, Petersburg, Lynchburg, Roanoke, Danville, Alexandria, Portsmouth, Manchester, North Danville, Buena Vista, Staunton, Winchester, Bristol, Radford, Charlottesville, Fredericksburg and Williamsburg, the last being a city by charter older than the first State constitution.

THE CITY OF RICHMOND.

Richmond, the capital of Virginia, is situated on the James River about midway between the mountains and the sea. It stands on several hills, at a point where the river breaks over "the falls" and unites with the tidal waters that come up through the harbor. The scenery around, up and down the river, is beautiful. Richmond is growing and improving, and its growth is healthy; its appearance is in keeping with a good degree of prosperity. The population of Richmond and Manchester and adjoining suburbs is estimated at 105,000; increase in ten years, 30,300. The city is 127 miles from the ocean as vessels sail. Tides come up to the city, making the greatest indentation of the sea on the Atlantic coast, and steamships ply between Richmond and New York and Philadelphia, giving many of the advantages of a seaport town.

The city is lighted by electricity, and has long and efficient lines of electric railways; also a very good horse-car service for parts of the city where the electric line does not go.

Water is plentiful; streets are wide and well paved. A noticeable attraction of Richmond is its parks. Marshall and Chimborazo parks give beautiful views down the river, and are in the east end. Jefferson, Monroe and Gamble's Hill parks are in the midst of the city, while Reservoir Park is a park with a lovely lake, and is situated far out to the west end.

These "breathing places" give great pleasure during the summer season, and conduce much to the healthiness of that part of every city's population that never gets "out of town."

The most central and conspicuous building in the city is the Capitol (State House). Standing upon the brow of a commanding eminence (Shockoe Hill) and in the midst of a lovely park of twelve acres, it may be seen for miles. "Here, on this Capitoline Hill," said Rev. Dr. Moses D. Hoge, in his address at the unveiling of Stonewall Jackson's statue, "we are in sight of that historic river (called by the Indians Powhatan, by the colonists the James) that more than two centuries and a half ago bore on its bosom the bark freighted with

the civilization of the North American continent, and on whose bank Powhatan wielded his sceptre and Pocahontas launched her skiff; we are under the shadow of that capitol whose foundations were laid before the Federal constitution was framed, and for which the edicts of Virginia went forth over her realm, that stretched from the Atlantic to the Mississippi—edicts framed by some of the patriots whose manly forms on yonder monument still gather around him whose name is the purest in human history."

From the platform on the capitol roof a complete view of Richmond and the city of Manchester, opposite, may be had, including the highlands (up the river), the falls, the islands, Hollywood Cemetery, the six bridges which span the James, the ships in the harbor and "the fertile fields and silent pines" on the opposite shore, with the river threading its way eastward until lost to sight behind the battle-crowned heights at Drewry's Bluff; and in the distance the battle-fields of Fair Oaks (Seven Pines), Mechanicsville, etc.

If the visitor to Richmond be of antiquarian taste, he may stand on the spot where rose the lodge of Powhatan, father of Pocahontas, and ruler of the Indian tribes of Eastern Virginia. At fancy's call he may people the shore with Capt. John Smith, Christopher Newport, and their associate pioneers who set foot on this soil in 1607, the year of the landing at Jamestown, and thirteen years before the arrival of the Pilgrim Fathers at Plymouth. He may saunter into the old church which rang to Patrick Henry's appeal for "liberty or death," and recall one of the most animating scenes in American history. He may walk the streets and roads beaten by the feet of Benedict Arnold's troops, when they devastated the country and burnt Richmond, which same thoroughfares later on echoed the tread of Washington's and Lafayette's soldiers in the movements which prefaced the surrender at Yorktown; while of Confederate memorials and associations every street has its share—every field was a camp a quarter of a century ago.

Here in Richmond is "The White House of the Confederacy," looking almost as it did when it was the presidential residence of Mr. Davis. The capitol of the State, in which the Confederate Congress sat, with doors open wide, invites the stranger to visit every room, and there is not a room without a history.

The executive mansion (the residence provided by the State for her Governor) is at the east end of the broad avenue leading from the monument. B. H. Latrobe was the architect, and it was built during the years 1811, 1812 and 1813. James Barbour was the first Governor who occupied it, and it has been occupied by every Governor since.

The trees in the square (park), remarkable for size and beauty, are filled with squirrels so tame that they will eat from the hand.

Within the enclosure of the Capitol Square are the capitol, the executive mansion, the Washington monument, the Stonewall Jackson statue, the statue, of Henry Clay, and the "bell-house," the last an odd, tower-like structure once the "guard-house" for the State soldiers (Public Guard).

The Maison Carree, an ancient Roman temple of Nismes, France, and now the municipal museum of that city, was the model selected by Mr. Jefferson for the capitol of Virginia, but it was not strictly adhered to in the construction of the edifice. The corner-stone was laid August 18, 1785; "the capitol" then being in a plain and small wooden structure on the west side of Fourteenth street, between Main and Cary.

The ground floor (generally called "the basement offices") contains the offices of the Auditor of Public Accounts, Second Auditor, Treasurer and Register of the Land Office (*ex-officio* Superintendent of Public Buildings).

In the Land Office are the oldest State records in America. They are continuous from the year 1620 (when the capitol of Virginia was at Jamestown) to this time. On the floor above are the two legislative chambers. In the rotunda, or quadrangle rather, between them, is Houdon's statue of Washington—"a *fac-simile* of Washington's person," said Lafayette.

The State Library has the largest and handsomest rooms in the capitol. Upon its shelves are 40,000 volumes, many rare and valuable MSS., and a variety of objects of interest, among them the following well worth inspection: 1. Speaker's chair of the House of Burgesses in colonial times; 2. Portraits of governors in colonial and later times; 3. The parole signed by Lord Cornwallis' own hand at Yorktown; 4. Original MS. of the Virginia Bill of Rights—the first in America; 5. The lawyer's fee-book of Patrick Henry; 6. Autograph of Washington at seventeen years of age, with specimens of his work as a land surveyor; 7. Jefferson's marriage bond; 8. Specimens of Continental and Confederate money; 9. MS. of Stonewall Jackson's last dispatch; and the original ordinance of secession.

A new and commodious public building, to contain all the State offices, is now being erected in the Capitol Square. This will afford ample and elegant quarters for all the State officials, several of whom now occupy offices outside the square and in different parts of the city.

Just across Capitol street is one of the most imposing and beautiful public buildings in the South—the new City Hall—which occupies the site of the old City Hall (built in 1815) and that of the First Presbyterian church (removed to the northeast corner of Grace and Madison streets). The corner-stone of the new City Hall was laid on the 5th of April, 1887. The design was made by Mr. E. E. Myers, of Detroit, Michigan, and the structure when finished will cost in the neighborhood of \$1,200,000. The stone is the celebrated James River granite, of which there are almost inexhaustible quarries all around this city. The work of construction is under charge of City-Engineer W. E. Cutshaw.

There are many buildings of great interest, with a history not altogether local. Space only will here be taken to call the attention of those who may visit the capital city to them.

The Masons' Hall, on Franklin street between Eighteenth and Nineteenth, is the oldest building in this country erected for Masonic purposes. The corner-stone was laid in October, 1785, and it is believed that the first meeting in it was that of the Grand Lodge, in 1796. The Masons have brought to completion a beautiful temple at the southwest corner of Broad and Adams streets—a worthy home for the lodges, chapters and commanderies that will be gathered there, and located it on a fast-improving part of Richmond's great retail thoroughfare.

The Jeff. Davis mansion, corner Clay and Twelfth streets, as the former "White House of the Confederacy" is popularly called, is only four or five squares from the capitol.

On Broad street below Twelfth is Monumental church (Episcopal), which marks the spot where stood the Richmond Theatre, destroyed by fire December 26, 1811 (while "The Bleeding Nun" was being played), burning to death Gov. G. W. Smith and fifty-nine others.



CITY HALL—Richmond, Va.



In the rear of Monumental church, facing College street, is the Medical College of Virginia, a handsome building in the Egyptian style of architecture.

Next on Broad street is the "First African," the oldest colored church organization in the city, and one of the largest membership in the land.

Half a mile onward, and on the hill beyond the valley, St. John's church is reached. The grading of the streets has left the church and graveyard surrounding it high up above the pavement, from which they are approached by flights of stone steps. The building was erected in 1740, and though it has been from time to time altered and improved, it is substantially the same which in 1775 echoed the speech of Patrick Henry to the Virginia Convention, sounding the key-note of the Revolution, "*Give me liberty, or give me death.*" The oldest tombstone, that of Rev. Robert Rose, is of date 1751. Services (Episcopal) are regularly held in St. John's.

There is one house in the city (whatever may be its real history) that is a curiosity and an enigma. The Old Stone House, Main street between Nineteenth and Twentieth, is without question the oldest building now standing in Richmond. It is supposed to have been erected by one Jacob Ege, and tradition associates with it the names of Washington, Lafayette, Jefferson, Monroe and other celebrities. Whatever may be its history, its antiquity is unquestionable, and it has been visited by thousands of strangers from all quarters of the globe. It is small, low pitched, but of massive walls and perfectly built.

The State Penitentiary is to the right of Gamble's Hill; its high walls at once indicate that it is a prison. It went into operation March 29, 1800, and has suffered from fire on several occasions. At the evacuation, April 3, 1865, the guard (a company of State "regulars") having been withdrawn from the city with the Confederate troops, the prisoners broke out, and a mob of ruffians broke in for purposes of robbery, and the buildings were fired and several of them destroyed.

When Aaron Burr was on trial for treason in Richmond, he was confined in one of the rooms since that time, until 1892, used as one of the superintendent's offices. The old building was remodelled in 1892, and commodious modern rooms added for the use of the superintendent and subordinate officials, and at the same time a large addition of cells was made to the men's ward. The women's ward is planned in modern style, a separate cell for every individual. By the act of the last Legislature a matron was appointed for the women's ward, who has been filling that responsible place since May, 1892.

CITY PRESS.

Among many other notable evidences of growth and prosperity in Richmond, there is none more significant or more gratifying than the striking progress made by our leading newspapers. The advantages of a metropolitan press are now fully enjoyed here, and these heralds of Richmond and advocates of her interest, with greatly improved facilities, have used every effort to promote the welfare of the people and the development of the State.

The prominent dailies are the *Dispatch*, *Times* and *State*. The *State* is an evening paper. Richmond has also the *Southern Tobacconist*, *Mercantile and Manufacturers' Journal*, *Southern Planter*, *Southern Farm Advertiser*, *Progressive South*, and the *Virginia Sun*. The *Planet* is a weekly, owned, edited and patronized by the colored people. In addition, there are two German papers, two legal publi-

cations, two medical publications, one society and six denominational religious papers.

Richmond is an example of almost unparalleled manufacturing development, but this is only the logical sequence of natural conditions, reinforced by the energy, enterprise and business sagacity of its people. These natural conditions are a magnificent water-power, direct railroad connection with inexhaustible coal mines, thus insuring cheap fuel, an empire of raw material to draw from, and a practically limitless territory to supply with manufactured products.

Among the largest manufacturing interests of Richmond are the iron, the milling and the tobacco; and from the two latter it is impossible to separate respectively the grain and the leaf tobacco trade.

The great flouring mills of Richmond and Manchester—the Gallego, the Haxall and the Dunlop—with their capacity of some 3,500 barrels per day, made sales amounting to upwards of \$2,000,000, although one of these plants suspended operations for several months to put in improved machinery. The flour trade of the city with South America was broken up by the war, but is rapidly regaining its *ante-bellum* proportions. The Richmond brands are the standard brands in the South American markets, owing to the fact that they stand the climate better than any other. This is due in large measure to the quality of the wheat that feeds the Richmond mills. The receipts of wheat, corn, oats and rye for 1890 were 4,281,798 bushels, an increase of 158,139 bushels over 1889.

The amount of sales of the iron plants for 1890—not including many smaller dependencies, only such establishments as the Tredegar, the Vulcan, the Richmond Locomotive Works (where the boilers of the battle-ship Texas were built)—was \$3,714,800. Number of hands employed, 3,238.

The sales of the fertilizing factories for 1890 amounted to \$1,045,000; of the manufacturing druggists to \$1,465,000; the acid and ammonia works to \$440,700; the sash, blind and door factories to \$515,000; bag and cotton goods factories to \$400,000; cedarware, hub and spoke plants to \$395,000; the paper and wooden-box and blank-book factories to \$639,700; carriage and wagon factories to \$423,000; granite work to \$598,300; paper mills to \$460,000; pork-packing establishments (exclusive of rehandled goods) to \$520,000; boot, shoe and leather goods factories to \$2,110,000; tanneries to \$245,000; furniture and mattress factories to \$283,000; agricultural implement factories to \$322,000; basket, broom and willow-ware factories to \$406,000; clothing factories and merchant tailors to \$340,000. Other important industries are bark and sumac mills, barrel factories, brick works, candy factories, spice mills, glue works, lubricating mills, saddle, harness and trunk factories, soap factories, tinware and stove factories, etc.

Richmond brands of plug and smoking tobacco, cigarettes and cheroots stand in the front rank. The amount of sales of the chewing and smoking tobacco factories in 1890 was \$6,615,100. The sales of tobacco reprized were over \$2,000,000 more, and the sales of cigar, cigarette and cheroot factories, \$3,697,200. The number of hands employed in these industries was 8,752. In the cigarette and cheroot factories large numbers of girls are employed. Richmond handles large quantities of Virginia and North Carolina brights, western leaf, West Virginia leaf and shipping grades, and is the market for the loose tobacco of an extensive area. It is also headquarters for Regie tobacco purchases of Virginia tobacco for Germany, Austria, France, Italy and Spain. The total

receipts for the tobacco year were 35,371 hogsheads, 4,388 tierces and 1,153,450 pounds of loose. In 1890 Richmond became the foremost cheroot market of the world. The city is a leader in the matter of manufacturing tobacco machinery and handling tobacco supplies.

Several other departments of the jobbing trade made sales of over one-half million dollars annually, including railroad supplies, hides and leather, hay and feed, books and stationery, and sewing-machines.

Some of the retail stores of Richmond are truly palatial establishments, both in respect of size and stocks carried. In fact, take the retail stock of Richmond by and through, it cannot be excelled in quality, variety or the matter of prices.

As an evidence of the growth of the jobbing trade of Richmond, let the reader take the following figures, which speak more eloquently than would chapters of comment. In 1885 the annual sales were about \$17,000,000; in 1890 they were over \$32,000,000—an increase of over \$15,000,000.

Richmond's commercial organizations are the Chamber of Commerce, the Tobacco Exchange and the Grain, Flour and Cotton Exchange.

The First Virginia Regiment and the Howitzer armories are both solid structures, and a credit in appearance and equipment to any city. The white military force of Richmond consists of one regiment of infantry, one independent infantry company, one battery of artillery, and two companies of cavalry.

The principal hotels of Richmond are Murphy's splendid European Hotel, Eighth and Broad streets; the Exchange and Ballard, Ford's, the American, the St. Claire, Davis House and Hotel Dodson, all of which are situated east of about the centre of the city; but Richmond capital has in contemplation a fashionable hotel in the western residential section, which will be designed expressly for the accommodation of families and the stop-over tide of pleasure-seekers that go from the North to the far South in the fall and return in the spring.

The Westmoreland Club house was formerly a private residence, and is not only handsome as to exterior, but elegant in all of its interior appointments, and is surrounded by ample and attractive grounds. In this building are the rooms of the Virginia Historical Society.

The Commonwealth Club building is a costly and beautiful structure of brick and brownstone, and is one of the most noticeable architectural features of the West End.

Richmond is abreast of the times in all reforms, and has many charities. Societies for the prevention of wrong and for reformation and relief are common and in active operation.

With the exception of New Orleans it is the largest city south of the 38th degree of latitude and east of the Mississippi River. Its corporate limits embrace 3,251½ acres; its public parks 356 acres. Its streets extend over 106 miles, and its street-car lines (larger part traversed by electric cars, and double-tracked) extend over thirty-seven miles. Population, with Manchester and suburbs, is 105,000. The number of houses erected in corporate limits in 1890 was 939, in addition to the largest number ever built in Manchester and upon the suburbs of both cities. The capital subscribed to building-fund companies, over \$7,000,000; suburban property laid off for building, 3,144 acres; Richmond's taxable values, under a moderate assessment, \$54,416,195; city property, including public buildings, parks, gas and water-works over \$6,000,000; tax rate—city, \$1.40; State, 40 cents on the \$100; banking capital, \$4,630,082; bank clearings, \$112,603,109; manufacturing establishments, 783; hands in factories, 21,613,

including over 7,000 females; capital invested in wholesale trade and manufactures, \$24,041,520; jobbers' sales, \$32,042,000; manufactured products, \$34,580,947; annual sales of retail trade, over \$40,000,000; water-power used, 4,500 horse-power; water-power undeveloped, 16,500 horse-power; suitable sites for factories on water-line, $2\frac{1}{2}$ miles; on railroads, 20 miles; number of competing rail and water routes bringing coal to Richmond, making it one of, if not the cheapest, coal market on the seaboard, 6; number of railroads diverging from Richmond, over which raw material is received and supplies distributed, 8; mileage of railroad systems entering Richmond, 10,134; mileage of those projecting lines to Richmond, 2,156; steamer lines to Richmond and its ports of entry, West Point and Newport News, in coastwise trade, 8; in foreign trade, 4; depth of channel to Richmond, to be increased to $25\frac{1}{2}$ feet, now 16 feet; to West Point, 22 feet; to Newport News, 29 feet. These figures represent a healthy development for 1890 all along the line, notwithstanding the severe financial depressions which characterized the latter half of that year.

The city has 238 schools, of which 140 are white, 98 colored. There are 84 white teachers, of whom 25 are males, 59 females. There are two high schools; white high school has 654 pupils, the colored has 317. The public schools are all handsome buildings, with successful teachers, and are supplied with all modern appliances.

The Baptist College is located here. There are also a number of high-grade private schools in this city.

Richmond is the county-seat of Henrico county. The court-house, county jail and county offices are on Main street of the city. A new jail was built in 1892.

Richmond has beautiful streets, the widest being, as its name indicates, "Broad street." It is also the longest street in the city. It is said to be one of the widest streets in America, being, it is claimed, wider than Broadway, New York. This street ends with Chimborazo Park on the east. A little nearer the river is Libby Park, upon which will be placed the Private Soldiers' and Sailors' Monument. The view here is very beautiful. On the left of the city, beyond its limits, sleep thousands of those who laid down to die, wearing the blue, and wearing the gray. The National Cemetery is on the Williamsburg road, where thousands of Union soldiers are buried, about two miles from the city.

Between these and the city is Oakwood Cemetery, where 16,000 Confederates are sleeping. A monument rising above them tells the story. Outside the city, on the west, is the Confederate Soldiers' Home. Near it is the noble monument to R. E. Lee.

THE CITY OF NORFOLK.

In the year 1705 Norfolk was incorporated as a town. It had quite an extended existence prior to this date, but its official life dates from this last named date.

It is located at the junction of the two branches of the Elizabeth river, which, uniting, form the harbor of Norfolk, than which there is no finer or safer one in America. This inner harbor opens out, by means of the Elizabeth River, into

HAMPTON ROADS,

a distance of three miles away. It is doubtful if this latter harbor has its equal in either the Old or New World.

As regards the depth of water, twenty-eight feet can be carried into and on through the inner harbor, and thirty feet can be carried up to Lambert's Point, the coaling station of the Norfolk and Western railroad, while at Hampton Roads the water reaches as high as fifty to sixty feet in depth.

Commodore Maury wrote of Norfolk and its waters: "Naturally, and both in a geographical and military point of view, Norfolk, with Hampton Roads, at the mouth of the Chesapeake Bay, as its lower harbor, and San Francisco, inside of the Golden Gate in California, occupy—one on the Pacific, the other on the Atlantic—the most important maritime positions that lie within the domains of the United States. Each holds the commanding point on its sea front; each has the finest harbor on its coast; each with the most convenient ingress and egress for ships, and each as safe from wind and wave as shelter can make them. Nor is access to either ever interrupted by the frosts of winter. In the harbors of each there is room to berth not only all the ships of commerce, but the navies of the world also."

These advantages of deep water and safe harbors and the near proximity of the same to the open sea (only fifteen miles) have resulted in the rapid development of the commerce of this port.

This is very conclusively and convincingly shown in the report of the secretary of the Chamber of Commerce for the business done in the year 1892, comparing the same with that of 1888.

EARLY VEGETABLE TRADE.

The country around Norfolk is famous for the cultivation of early vegetables. Statistics, carefully gathered and compiled at the Chamber of Commerce, show that shipments to Northern markets of this profitable industry, beginning in May and ending in August, were as follows: Barrels, boxes and crates in 1891, 1,488,531; barrels, boxes and crates in 1892, 2,054,639.

These packages represent about \$4,000,000, and if we add the local consumption for resident population, and that of over 1,000,000 tons of shipping in the harbor annually, we may safely place the receipts from the "trucking" interests at \$6,000,000.

EXTRACTS FROM THE REPORT OF THE CHAMBER OF COMMERCE.

Lumber (feet).—1888, 138,625,263; 1892, 293,725,122—increase, 112 per cent.

Logs (feet).—1888, 105,637,554; 1892, 114,386,459—increase, 8 per cent.

Staves (M).—1888, 5,843,966; 1892, 8,798,917—increase, 52 per cent.

Shingles (M).—1888, 30,714,540; 1892, 47,790,896—increase, 55 per cent.

Railroad ties (M).—1888, 185,173; 1892, 631,425—increase, 241 per cent.

Grain.

Hay (tons).—1888, 7,709; 1892, 14,017—increase, 82 per cent.

Corn (bushels).—1888, 736,858; 1892, 1,206,891—increase, 61 per cent.

Oats (bushels).—1888, 247,970; 1892, 424,543—increase, 71 per cent.

Meal (bushels).—1888, 183,942; 1892, 313,888—increase, 70 per cent.

Rough rice (bushels).—1888, 6,168; 1892, 37,484—increase, 513 per cent.

Rye (bushels).—1888, 1,181; 1892, 124,500—increase, 955 per cent.

Wheat (bushels).—1888, 138,338; 1892, 552,101—increase, 413,763 bushels.

Peanuts (bags, 4 bushels each).—1888, 289,162; 1892, 404,514—increase, 115,352 bags.

Groceries.

Coffee (bags).—1888, 10,024; 1892, 10,807—increase, 559 bags.
 Sugar (barrels).—1888, 30,154; 1892, 49,277—increase, 19,123 barrels.
 Cheese (boxes).—1888, 14,168; 1892, 22,108—increase, 7,940 boxes.
 Butter (tubs).—1888, 20,185; 1892, 23,413—increase, 3,228 tubs.
 Flour (barrels).—1888, 181,798; 1892, 228,721—increase, 46,923 barrels. Bags—
 1888, 2,300; 1892, 381,583—increase, 379,283 bags.

Provisions.

Pork (barrels).—1888, 11,080; 1892, 13,852—increase, 2,772 barrels.
 Fish and Oysters (barrels and boxes).—1888, 23,939; 1892, 46,617—increase,
 23,678 barrels and boxes.
 Meat (pounds).—1888, 13,819,075; 1892, 19,779,783—increase, 5,960,708 pounds.

Miscellaneous.

Cotton-seed Oil (barrels).—1888, 5,799; 1892, 31,560—increase, 25,761 barrels.
 Cotton-seed Meal (bushels).—1888, 61,539; 1892, 91,657—increase, 30,127 bush-
 els.
 Horses (head).—1888, 922; 1892, 3,364—increase, 2,442 head.
 Cattle (head).—1888, 2,949 head; 1892, 11,635 head—increase, 8,686 head.
 Naval Stores (barrels).—1888, 14,198; 1892, 55,906—increase, 41,708 barrels.
 Coal (tons).—1888, 938,369; 1892, 1,802,385—increase, 100 per cent.
 Pig Iron (tons).—1888, 38,545; 1892, 127,455—increase, 281 per cent.
 Coke (tons).—1888, 168; 1892, 4,159—increase, 3,991 tons.

Cotton.

Receipts and shipments of cotton for the past twelve months, with statements
 for previous years:

	1892—Bales.	1891—Bales.	1890—Bales.
Receipts	355,539	626,762	575,548
Exports	129,947	260,134	284,092
Coastwise shipments, etc.	242,823	359,965	210,123
Stock	48,478	65,700	59,046

Coal.

Exports of coal from Lambert's Point pier from January 1 to December 31,
 1892:

Number of tons	1,654,216 1/2
Value	\$4,962,648

These reports show that during the year just ended the shipments were 185,473
 tons in excess of 1891.

Norfolk's Banking Business.

The following is a combined statement, including all the banks in this city
 except one private bank, tabulated from statements of December, 1892:

Capital stock	\$1,215,200 00
Deposits	5,752,596 87
Surplus and undivided profits	546,613 88
Loans and discounts	4,688,153 46

Clearing-House Notes.

Clearings in 1892		\$50,620,725
Balance		7,156,052

Assessed Value of Property.

Real estate, year 1892		\$18,942,600
Personal property, 1892		2,369,090
Total value		\$21,311,690

Real Estate Transfers.

	1890.	1891.	1892.
City of Norfolk	\$2,540,695	\$1,720,969	\$1,920,276
City of Portsmouth	734,900	222,740	483,122
Norfolk county	3,801,003	3,121,919	1,926,657

New Buildings.

Number and value of buildings erected in Norfolk in 1892, and the assessed value of the same:

Number of buildings	465
Assessed value	\$687,800

The above sum does not include a large amount expended in alteration and improvements during the year.

These figures give the increase only in a few items of business in which the city is interested. In the lines of groceries, boots and shoes, hardware, clothing, etc., a great increase is shown. It is estimated that during the year 1892 fully 1,500 new houses were built in Norfolk, Portsmouth, Berkley and their different suburbs. These new houses were all filled as fast as they were ready for occupancy, and to-day there are but very few empty houses on this harbor.

THE POPULATION OF NORFOLK

proper will reach 45,000, while on the entire harbor there are 80,000 inhabitants. The city is so located as to fall the natural heir to the trade of eastern North Carolina and Virginia, a territory of fully 50,000 square miles. In this immense field Norfolk has the commercial supremacy to such an extent as to make her almost sole heir.

Then, in addition to this, the indirect trade of the city is immense, and getting more so each year, drawing articles for export from away "beyond the Mississippi," and also from points in the remotest "great Northwest," by means of her

TWO GREAT TRUNK LINES,

viz.: The Norfolk and Western and the Chesapeake and Ohio railroads.

As a distributing point for imports, the city is already noted for the large field covered and the favorable freight rates. There is no city in the country that enjoys such liberal rates of freight to all the great Northern consuming centres.

There is no point in the South where the "raw material" may be gotten together as cheaply as on this harbor. There is an abundance of "cheap labor," also "cheap steam coal" of the very best quality; and there seems to be no real or substantial obstacle to the making of Norfolk a first-class manufacturing point. The natural advantages are here; all that is needed to utilize the same is capital and experience.

The future rapid growth and development of this seaport is fully assured.

MANCHESTER.

The history of Manchester dates back nearly 300 years. It is the oldest city, except Jamestown, which is its senior by about two years. The first permanent settlement made was on May 13, 1609, by Sir Thomas West (Lord De La Ware), the president of the Virginia colony, and the land was first permanently divided about 1624. It was settled about seventy-eight years before Philadelphia, Pa. Houses were built, lots cleared and tilled; mulberry trees set out (for silk culture) and vineyards had been planted (for wine) by Frenchmen sent for that special purpose. Lumber mills were started by men from Holland, and several furnaces for iron ore were in full blast and the future prospect seemed bright, when the terrible Indian massacre took place on the 22d of March, 1622, and swept away nearly the entire population. Other pioneers from Europe came and resettled the lands and gave new life and impetus to the industries, when the massacre of April 18, 1647, took place; at which time all the inhabitants were killed and a famous Indian chief was killed.

Undismayed by the fate of their predecessors, other settlers came, and under great difficulties the interests of the village were pushed forward, so that in 1748 it was quite a commercial town and enjoyed much prosperity. In 1748 the name of the town was changed from "Town of Chesterfield and Rocky Ridge" to Manchester, after the Manachen Indian tribe, which had occupied the site.

In 1773 the James River Bank was established, being one of the first in America. During the war of the Revolution the troops of both armies often occupied the town and harassed the citizens, who were mainly loyal to the American cause. Arnold and Phillips destroyed the whole town with a large quantity of gunpowder in April, 1781.

Among the first tramways built in America was the Manchester and Midlothian, about thirteen and one-half miles. It was incorporated in 1831 and was successfully operated until 1856.

The population of Manchester is claimed to be 18,000; the census of 1890 gives it 9,246.

The town is situated on the south side of the James, opposite Richmond, with a frontage of nearly two miles. A part of the river front is occupied by a power canal; the balance is wharfage property. The city has first-class natural drainage; most of the streets are paved and graded, and there are no marshes near it. It is lighted by electricity. Three long lines of electric cars connect it with Richmond; a single fare carrying you one way to any part of that city.

It has three large public school buildings and several good private schools. There is a brick court-house, Masonic temple and handsome blocks of business houses. There are fifteen churches—ten white, five colored. The Mechanics' and Merchants' Bank has a substantial paid-up capital.

Taxes are low and living cheap. It has many industries in prosperous condition—corn and flour mills, paper-twine mills—the largest in America; two large cotton factories, the Manchester railroad-spike company, shuck mattress company, large fertilizer company, ice plant. The Danville Railroad and Richmond and Petersburg Railroad (Coast Line) each have extensive works here. Difficulties between capital and labor are unknown. No strikes trouble Manchester. Its citizens are principally artisans and mechanics and railroad men.

The city has a fine filter, which filters all water before distributing it to the city. The Railroad Young Men's Christian Association is doing a great work in the city among the railroad operatives.

Manchester has a park magnificently located on the heights above the city—Forest Hill Park; is connected by electric cars with Richmond, and is a place of constant resort.

STAUNTON.

This steady, reliable, conservative city is situated beautifully among the hills near the "divide," northeast and southwest of the great renowned Valley of Virginia. It is the county-seat of Augusta, one of the largest, most productive and prosperous counties of the State. Staunton was named in honor of Lady Staunton, the wife of Governor Gooch. Campbell's history says it was incorporated by act of Assembly in 1748. On June 4, 1781, the Legislature of Virginia, driven out of Richmond by Arnold in January, took refuge in Charlottesville, and on the appearance of Tarleton, adjourned to meet in Staunton, June 7th. It met in the Episcopal church, and thereafter elected a Governor, Thomas Nelson, Jr., and delegates to Congress, headed by James Madison. Staunton has honorable connection with all the wars of this country. Her soldiers can be found by name on the muster-rolls of the Revolution, the war of 1812; the Mexican war, and the world knows the character of the soldiers of the Valley in the war of the "Lost Cause." Staunton has the band of the Stonewall Brigade.

But this city has not rested on its ancient or modern record. Since the war it has pushed its industries and trade. It has a fine trade, with numerous stores, several banks, wagon and implement factories, foundries, etc. The Baldwin District Agricultural Fair is annually held at the extensive fair-grounds at Staunton.

Its transportation facilities are excellent. It is on the great Valley turnpike, and the centre of county roads. Here is the point of intersection of two trunk lines of railroads, viz.: The Chesapeake and Ohio and the Valley branch of the Baltimore and Ohio railroads. Here are the Western Lunatic Asylum, and the Asylum for the Deaf, Dumb and Blind. Also four prosperous female colleges, viz.: The Virginia Female Institute (Episcopal); the Wesleyan Female College (Methodist); the Augusta Female Seminary (Presbyterian); and the Staunton Female Seminary (Lutheran); and one male academy of fine reputation. Its public-school system is as good as any in the State. Staunton is surrounded for miles by the finest agricultural lands, and for years past has been one of the great flour markets of the State. In 1886 it had a population of 7,000.

BRISTOL.

This city is in a very unsettled condition. The unsurveyed line between Virginia and Tennessee, now the subject of a suit in the United States court, runs between what was the town of Bristol, in Tennessee, and Goodson, in Virginia, the main street being this supposed line. The fixing of the terminus of the Norfolk and Western Railroad at this point brought this double town into prominence, and the Virginia half, having lost its name, gained so greatly in population that from half a town it became a whole city, incorporated with over 5,000 inhabitants. If Virginia gains the suit this city of Virginia will fully double its population.

The Norfolk and Western, East Tennessee, Virginia and Georgia, Southern Atlantic and Ohio, and the Bristol and Elizabeth railroads all meet here and add to the trade, business and prosperity of this city. It has one iron furnace of 150 tons capacity per day; one tobacco factory; three planing mills; there are five miles of track of electric railroad; there are the usual city officials. Educational advantages are fair. There are two high-grade female schools; one public school-building which will accommodate 500 pupils. There are nine churches of the different denominations. It has a good trade, increasing with the development of the section.

ROANOKE CITY.

The city of Roanoke is in Roanoke county, in that portion of the Valley of Virginia known as the Roanoke Valley, which lies between the Blue Ridge and the Alleghany mountains—at this point being only a few miles apart.

It is 53 miles from Lynchburg, Va.; 219 miles from Washington, D. C.; 286 miles from Baltimore, Md.; 199 miles from Richmond, Va.; 257 miles from Norfolk, Va.; 153 miles from Bristol, Tenn., and 239 miles from Hagerstown, Md. The altitude of the city is over 1,000 feet above sea level.

It is the centre of a great mineral region; and with fine agricultural and timber lands, healthy and salubrious climate, splendid railroad facilities, combined with the liberal policy of its founders and the enterprise of its people, it has grown from what was known in 1882 as the village of Big Lick, with 600 inhabitants, into the city of Roanoke, with 25,000 inhabitants.

The nucleus of the city of Roanoke was Old Lick, officially known as Gainsborough, a stage station on the Lynchburg and Salem turnpike.

Gainsborough was established in 1838, being inaugurated with a considerable boom in town lots, some of which sold as high as \$250 each; yet in 1870 the village only contained a mill, tavern, stage station, two or three stores, three churches, and about fifteen private residences, and even some of these had been moved away previous to 1882.

In November, 1852, the Virginia and Tennessee Railroad was opened, and the residents of the neighborhood naturally gravitated to the vicinity of the railroad, about three-quarters of a mile distant from Old Lick, and a new village started around the depot, and in course of time became known as "Big Lick." The origin of the name Lick is from the saline marshes, where wild animals came to lick the salt. All over the country such places were called "Licks."

On February 28, 1874, the town of Big Lick was incorporated, and in November, 1881, twenty-nine years after its establishment, contained about 600 inhabitants, and was the centre of considerable trade, the number of buildings of all kinds at this date being 119.

The growth of Roanoke has been wonderful. With every passing year it has grown in population and importance, due in a degree to the energy, enterprise and public spirit of its citizens, but mainly to its many natural advantages and transportation facilities.

Perhaps no city in the country has a more abundant supply of pure water. This is obtained from Crystal Spring, which gushes out from the foot of Mill Mountain at the rate of about six million gallons a day. This rate is maintained through summer and winter, at the same temperature, plenty cool enough to drink without ice, and, in fact, as clear as crystal. The amount consumed and

wasted daily by the city is a little less than 2,500,000 gallons, or at the extraordinary rate of ninety-six gallons *per capita*. There is a splendid reservoir on a spur of Mill Mountain, into which water is forced by powerful pumps. The reservoir forces an abundance of water into the highest buildings in the city. The works are owned by a water and gas-light company.

The annual amount now paid the wage-earners in Roanoke is not less than \$4,000,000. The capital invested in manufacturing enterprises is \$8,125,000, and in land companies about \$11,000,000. Roanoke has eight building and loan associations, with a subscribed capital of \$8,000,000. The banking capital amounts to \$2,000,000, and the banking institutions are all in a prosperous condition.

The church property is now valued at \$400,000, and \$200,000 additional is now being put in new churches. The public schools now have over 1,500 pupils, and handsome and commodious buildings have been erected. The Terry Building Company has just completed, at a cost of \$175,000, a magnificent seven-story stone and brick structure to be used as a banking and office building. It would reflect credit on any city. Congress has appropriated \$75,000 for the erection of a public building, and a site has been selected.

The Roanoke Machine Works is the largest industry here. The plant in this great establishment embraces all the latest improved labor-saving machinery.

The assessed valuation of real estate in Roanoke in 1882 was \$353,364; in 1892 it was \$12,645,425. The capital in business on which license is paid is \$1,600,000. The population in 1881 was 400. The registered vote of the city is now 5,127, against 304 in 1883, and the population of the city is at least 25,000.

The religious denominations are the Baptist, Methodist, Episcopal, Lutheran, Protestant Episcopal, Presbyterian and Roman Catholic; also the United Brethren in Christ and Dunkards.

Roanoke has many and valuable industries, the principal of which are large machine works and iron works. It is a great centre of activity and has all that goes to make up a progressive booming town. Its progress and stability are unexampled, and everything seems to indicate its yet greater degree of prosperity in the future. It has five banks and 100 incorporated companies, seven newspapers, an opera house, academy of music, and two parks; also a home for the sick, and St. Andrews Orphan Asylum.

The following table shows for itself the wonderful advance that has been made in ten years:

	1882.	1892.
Tons of freight forwarded	30,485	147,927
Tons of freight received	37,898	564,541
Express receipts	\$2,400	\$98,000
Post-office receipts	1,000	40,000
W. U. telegraph receipts	200	30,000
Bank capital	150,000	900,000
Bank deposits	137,000	1,418,000

ALEXANDRIA.

Alexandria is situated on the Potomac, about seven miles from Washington City, having a population of about 13,000. It is admirably situated for manufacturing purposes, being near the mines of coal and iron, and on a deep river. The Alexandria and Fredericksburg, Virginia Midland, Washington and Ohio, and Washington and Alexandria railroads all centre here.

The nearness to Washington city adds to its many advantages. The place is quiet and orderly, and its morality is decidedly above the average. It has a full supply of the best water. The health of the city is excellent; it has not suffered from any pestilence since the beginning of the century—even the cholera touched it lightly in 1832, and passed it by in its other visitations.

There are Methodist, Episcopal and Presbyterian churches, also Catholic, Baptist, Lutheran and a Friends' meeting house and a Jewish synagogue for white people, with seven Baptist churches, one Episcopal and one Methodist for colored people.

The city is being improved and new houses are built every year, yet rents are low and living cheap. Schools are excellent. Besides the public schools, which are large and well managed, there are more private schools and academies for the population than in almost any other part of the Union. It has many institutions for advanced scholars. St. John's Military Academy, Alexandria Female Seminary and other excellent schools for young ladies; also Catholic and Lutheran schools. The Episcopal Theological Seminary is located near Alexandria.

Manufacturing has increased in Alexandria in the past few years. There are large fertilizer factories and quite extensive manufactories in wood. Clay for brick-making is abundant, and there are several large brickyards in operation. There is an abundant supply of sand for all building purposes, while limestone is brought to the kilns very cheaply by the canal. The city has three newspapers—the Alexandria *Gazette*, one of the oldest papers in the State; the *News*, and the *Farm and Home*, which is the organ of the State grange. It connects with Washington by steamer every hour, and by rail every half hour.

There are interesting associations clustering around Alexandria, and many places of interest—the old church which Washington attended; the hotel which bears the name of General Braddock, which was said to have been his headquarters when he came to join Washington against the French and Indians. Later, and more sorrowful because it touches the hearts of some who live to-day, Alexandria witnessed the tragic deaths of Ellsworth and Jackson (the beginning of the four years' war), the 23d of April, when Ellsworth tore down the Confederate flag from the top of the Marshall Hotel and was shot by Jackson, the proprietor of the hotel, who was in turn shot by a zouave, a Federal soldier. Alexandria has seen many changes, but seems little affected by them, but remains as it was perhaps decades ago.

DANVILLE.

The city of Danville is situated on the Dan River at the junction of the Virginia Midland and the Richmond and Danville railroads. It is about 150 miles from Richmond and about 240 from Washington.

Twenty years ago it was a village, now it is a busy, thriving city, and claims to be the greatest loose-leaf tobacco market in the world, and the greatest market for bright tobacco. In handling this tobacco, employment is given to 800 men for the year, at an expense of \$200,000. The leaf tobacco dealers number 104, giving employment to 3,000 hands. The cash capital employed in the manufacturing business is \$1,980,000; the value of machinery \$162,000, and the value of factory buildings and real estate \$334,000. Next to tobacco in importance is the cotton industry. The cotton mills give

employment to 1,000 people, and pay out in wages at least \$250,000 per annum. The combined mills have 1,270 looms and 37,723 spindles. They consume about 200 bales of raw cotton per week and turn out about 60,000 yards of cloth per day. Annual value of output, \$1,000,000. In addition to these there are two large grist mills and flour mills, two machine shops, two box factories, two wagon factories, one chair factory, one marble yard, three bottling establishments, four planing mills and lumber yards, and two plumbing and gas-fitting establishments. These give employment to 800 people at \$30,000 per month. The city is connected with the city of North Danville by a splendid iron bridge, making them one in their interest and business relations. The streets are well lighted by electricity. The water, gas and electric-light plants all belong to the city. The city does not propose to make money by these enterprises, but to furnish light and water at prices approximating cost.

Danville has a model system of sewers which have proven successful in every respect.

The city has many handsome buildings, a fine, new city hall, United States public building, a market-house, a new public school building, two bridges across the river—one of iron—and a large suburban park now being improved. There is also an electric railway, telephone exchange, free delivery of mails, beautiful theatre, and an elegant new hotel—one of the handsomest and best equipped in the South. The total value of church property is \$205,800, held by the Methodists, the Episcopalians, Baptists, Presbyterians, Disciples, and Catholics; the colored people have four churches, valued at \$26,700. Danville, in its resident portion, is one of the most attractive cities. As a home it offers many advantages. It is a clean and fresh-looking town, and its people open-handed and hospitable. It is a remarkable fact that fifty per cent. of its population are church members. It has fine educational advantages, good public schools, primary and graded, for white and for colored children, besides the Danville Military Institute, two female colleges, and several excellent private schools. The colored Presbyterians have a flourishing industrial school, valued at \$6,000. which has a full list of pupils. The city also has a conservatory of music, of which Danville is justly proud.

Danville is connected by a narrow-gauge railroad with the Norfolk and Western system at Martinsville, and the road continues to Stuart, in Patrick county. There is a branch also to Leaksville, North Carolina.

Danville has a splendid water-power only partially utilized. The city is also the terminus of the Atlantic and Danville Railway, giving connection with deep water at Portsmouth.

WILLIAMSBURG.

Williamsburg is on the Chesapeake and Ohio Railroad, forty-eight miles from Richmond and twenty-seven from Newport News. It is on a ridge, midway between the James and York rivers. In colonial times it was known as Middle Plantation. The first act passed for its settlement was in 1632, the second in 1633. In 1644, upon the petition of the inhabitants of Middle Plantation Parish and Harris Parish, they were together incorporated into Middletown Parish. The State House at Jamestown having been burned, an "act directing the building of the capitol and the city of Williamsburg" was passed in 1699, and thenceforth the seat of government was removed from James City to Williamsburg, and the General Assembly met in "His Majestie's Royall College of William and Mary" until October, 1705, when they met for the first time in the capitol.

The reason given for the removal holds good to this day, although another generation and another government holds the land "because it hath been found by constant experience to be healthy and agreeable to the constitutions of the inhabitants of His Majestie's colony and dominion, having the natural advantage of a serene and temperate air, dry and champaign land, and plentifully stored with wholesome springs." "The said city shall be called Williamsburg, in honor of our most gracious and glorious King William, and the main street shall, in honor to His Highness William, Duke of Gloucester, be called *forever* The Duke of Gloucester street." The capitol building stood opposite to the college, at the eastern end of Main or Duke of Gloucester street. It was burned in 1746 and again in 1832, and a female seminary was put upon the site; that, too, is gone.

The palace of the Governor of the colony was situated on Palace Green; the site is now occupied by a school, the property of William and Mary College. An act for erecting a magazine was passed in 1714, during the administration of Governor Spottswood.

This is familiarly known as "the powder-horn," and was falling into ruins when it was repaired by the Society for the Preservation of Virginia Antiquities, and is now used as a museum. Space does not allow a description of all Williamsburg was—all it was planned to be—but something of its ancient glory and much added interest hangs around it still. The beautiful old church still stands, kept in good repair; an organ was brought over from England for it in 1722.

The galleries, the windows, the pulpit, the font, the aisles, with slabs telling of the dead of two hundred years ago, so evidently of "ye olden time"; the graveyard close around the church—all help to increase the reverence and love with which many regard the church of their forefathers.

Williamsburg differs from other towns in this, that it has the peaceful quiet of a village—and is a village—while it is a city by a charter from a King, and its streets and all the plans that were made for it are upon a scale equal to its former expectations.

The notable houses that remain are the residence of Chancellor George Wythe and the headquarters of George Washington in 1787; and a house on the court-house green, where Lafayette was entertained on the occasion of his last visit to America. South of Frances street and east of the lunatic asylum is the six-chimney lot, once the home of Martha Washington when she was the Widow Custis.

There are four churches with pastors—the Baptist, Methodist, Episcopal and Presbyterian. There are also two churches for colored people, both with pastors. Besides the college there are public schools for white and colored. There are also several private schools, one of high grade; one hotel, one transient boarding-house and thirteen college boarding-houses. Besides the college hotel there is a Masonic lodge, a Confederate camp and ladies' auxiliary, a Good Templars' lodge; six attorneys, fourteen merchants, three physicians and the usual number of artisans, tradesmen, etc.

Williamsburg has also the Eastern Lunatic Asylum, the large and handsome grounds and buildings of which add much to the interest which attaches to Williamsburg. This town is the centre of a refined and cultured social circle, and travellers who come from curiosity carry away a feeling born of something better than is gained by the advancement of modern times.

LYNCHBURG.

Lynchburg is situated on the south and west side of the James, 200 miles from Washington city and 125 miles from Richmond. Its name was derived from one of its first settlers, John Lynch, and was called Lynch's Ferry until incorporated. Lynchburg is a busy, thriving city, pushing ahead on all lines of enterprise and industry. The population is estimated at about 25,000. The values in real and personal property amount to the large sum of \$12,362,116. This shows an unusual degree of solid prosperity. The growth of the city has not been in the nature of a boom, but upon the basis of steady increase from energy and enterprise. In all matters that affect the city's welfare, Lynchburg is fully abreast of the times. It has its streets paved wherever practicable with Belgian block. The city is lighted by electricity, and, notwithstanding the steepness of the hills, an electric railway passes around the entire city.

The city is connected with the town of Madison by a free iron bridge across the James (this suburban town of two thousand inhabitants draws all its supplies from Lynchburg). The city is connected with the suburb Rivermont by a splendid bridge over Blackwater creek, 1,200 feet in length, including the approaches; the iron work is 1,000 feet, its width is 60 feet, its height 132 feet, with a double electric railway, two roadways 20 feet wide, and a 9-foot walking-way on each side. This grand bridge is and ought to be the pride of Lynchburg; it connects with the great avenue, 90 feet wide, upon which is located Randolph-Macon Women's College, designed to give young women all the educational advantages that Randolph-Macon gives the young men. This college is owned by the Methodist Episcopal Church, South.

The public schools of Lynchburg are on the most advanced plan, fully equipped with all modern appliances.

Lynchburg is branching out in all lines of trade and industry. What has been done and is being done will be shown by the following: It has established industries, free schools, capital wholesale houses, and all the advantages of a solid city; the junction of three great railway systems—Norfolk and Western, Richmond and Danville, and Chesapeake and Ohio, and also the Lynchburg and Durham; the coal and iron of Virginia, with the cotton of the South, and cheap wool, lumber, hides and minerals, of a vast tributary region. It has 24 churches, an excellent system of free schools, 1 cotton mill, 3 barytes mills, 2 talc mills, 4 brick works, 2 furnaces, 1 cooperage, 1 spoke and handle factory, 1 bark extract, 4 flour mills, 4 grist mills, 1 bone mill, 2 sumac mills, 1 tannery, 3 iron furnaces, 1 brass foundry, 1 zinc reduction works, 3 marble works, 1 paint works, 5 candy manufacturers, 3 stone quarries, 3 daily newspapers, 2 weekly newspapers, 5 job printing establishments, 4 national banks, 1 State and 3 private banks, 3 building fund associations, 30 tobacco factories, 5 warehouses for sale of leaf tobacco, 1 storage warehouse, 1 drug mill, 4 sash and blind factories, 4 building material factories, 1 water-works, 1 gas-works, 5 planing mills, 1 incandescent light plant, 1 arc light plant, nail works, merchant bar mill, tobacco extract works, 2 hogshead factories, fertilizer works, street-car line, 3 book-binderies, 3 carriage and wagon works, wagon and agricultural implement works, 1 cannery, 3 harness works, 15 stemmeries, 6 cigar factories, 4 smoking tobacco factories, 2 cigarette factories, 1 snuff factory, 1 dental chewing-gum factory, 2 machine shops, gas and water main foundry, 2 box factories.

The Young Men's Christian Association building is one of the handsomest and best in the State, well equipped in all its departments. The United States building is located on one of the principal streets. The opera house is the finest perhaps in the South. About a mile out of the city is the Miller Orphan Asylum, a large handsome building and fully endowed institution.

Lynchburg is a picturesque city, from some points appearing like a fortified town with castles and towers and every natural advantage for defence. A bit of history of interest is the fact that Hunter, the notorious marauder of the Civil War, came thundering at the door of this Mountain City, but could not come in.

PORTSMOUTH.

The city of Portsmouth is a port of entry, is in Norfolk county, of which it is also the county-seat. It is conveniently situated on the western shore of Elizabeth River, at the point where it empties into the harbor. The population is about 13,863. It is a quarter of a mile from Norfolk; about the same from Berkley.

Portsmouth's river frontage of deep water is about a mile, the river being of sufficient depth at the wharves to float the largest vessels. The city of Portsmouth is fair to look upon, being in appearance comfortable and clean—a rare thing in seaport towns.

It is regularly laid out, having a double row of shade trees down the middle of some of its streets. Public buildings, churches, and private residences are handsome and well kept. Trucking is the main industry; preparing "truck" for market and shipment gives employment to thousands of men and women within the radius of five miles. Three millions of dollars' worth of farm produce is shipped annually, twelve hundred or thirteen hundred hands being sometimes engaged in gathering strawberries alone.

Epidemic diseases are uncommon, there being no record of any such visitation since the yellow fever, which was brought from the South, in 1855.

The water supply of Portsmouth is good and abundant; the fire department first-class. The public schools are large and well furnished. The city almshouse is on a farm a short distance from the corporate limits. There is little destitution and crime in Portsmouth, an average of nineteen being reported from the almshouse in 1886. Portsmouth enjoys unsurpassed advantages of transportation, and there are openings everywhere for enterprise and energy and capital.

The city has fine churches, and a seating capacity sufficient for the needs of the people. Oyster-planting and harvesting are important industries of the city. One packing-house alone plants 30,000 bushels annually and ships about 150,000, thus giving employment to hundreds of laborers. There is a ready sale for the white oak timber of this region in the city. Portsmouth connects with Norfolk and Berkley every twenty minutes by steamers, which ply between those towns.

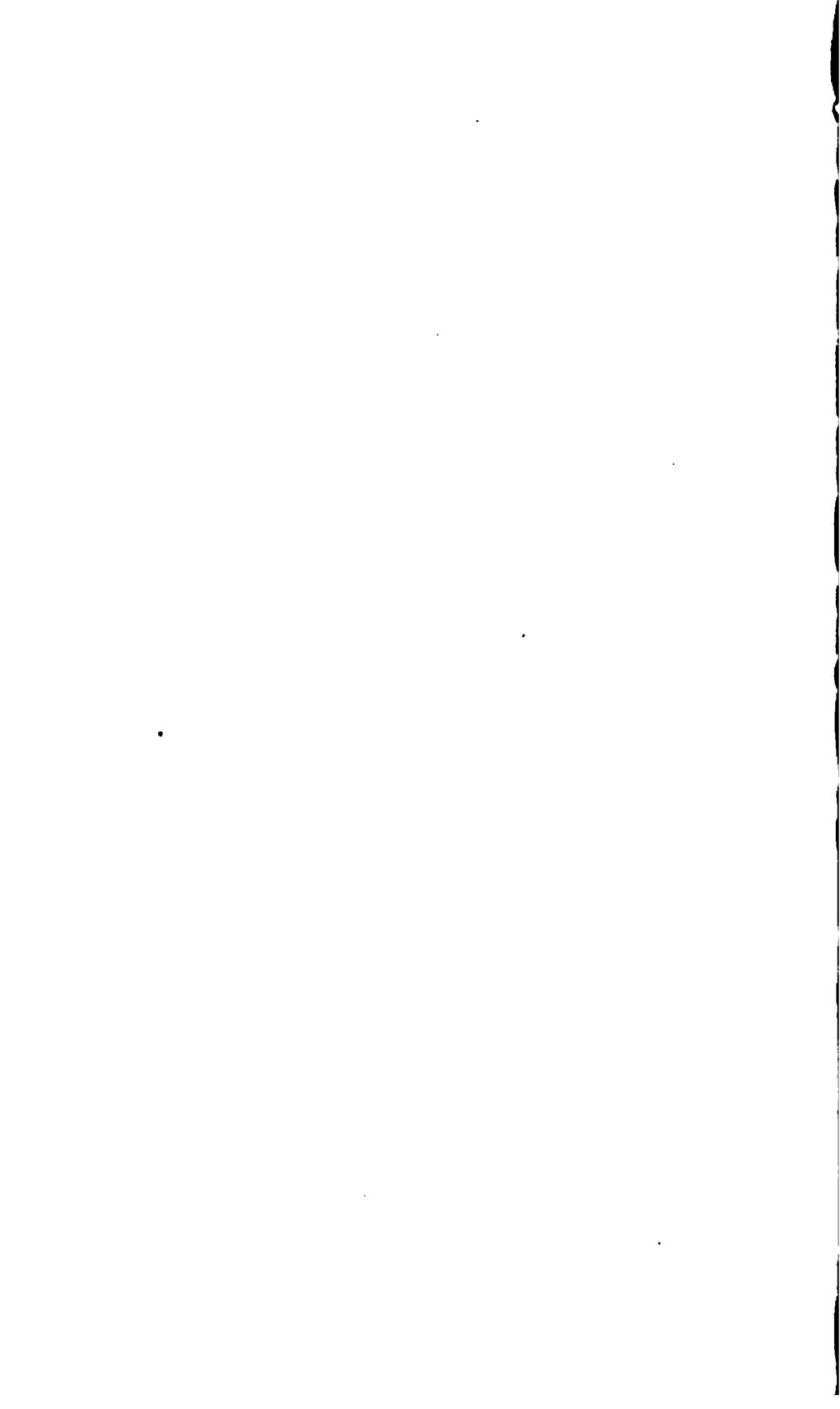
FREDERICKSBURG.

The city of Fredericksburg is situated at the head of tide-water on the Rappahannock River, 100 miles from Chesapeake Bay. The city has 5,000 inhabitants. The climate is salubrious and healthy—no epidemic disease has ever visited Fredericksburg. It is amply provided with water and railway transportation. The surrounding country is rich, and on the very edge of the city

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BUENA VISTA, VA.



is an almost limitless deposit of granite of the finest quality, which proximity to markets where building stones are needed makes very valuable.

There are nine churches, two schools, gas and water-works, an electric-light plant, two banks, one opera house, two newspapers, three flour mills, bark mills, sumac mills, bone mills, shoe factory, machine shops and foundry, plow works, woollen mill, silk mill, pickle factories, ice factory, three hotels, cigar factory, steam cannery, etc.

Splendid iron free bridges span the Rappahannock at two points. The water-power of this place runs many of its factories, and would be sufficient for a hundred more. The water does not freeze, and factories can run night and day the year round.

Fredericksburg has many attractions as a place of residence. Refined and cultured society, with many historical associations, make it a point of more than common interest; Washington's mother's house and home is here; General Mercer's old homestead; besides, the battle-fields of the Civil War attract many visitors to the city.

Markets are well supplied with luxuries of every kind, including abundant supplies of fish and oysters.

BUENA VISTA.

The town of Buena Vista is one of the many new towns that seem to have sprung up, as if by magic, in some parts of Virginia. In 1889 the Buena Vista Company, after exploring and opening their ore land, succeeded in attracting the attention of capital, on account of the good showing of ores. Late in the same year they broke ground for the furnace plant, and a narrow-gauge railroad was built and a standard-gauge road constructed, and the washing plant was put in operation in November, 1890. The furnace went into blast December 12th and has been running steadily ever since. This company employs 250 men at its furnace and mines. Ore taken from the mines here is made into pig iron and manufactured into boilers, engines and furnaces—all within the corporate limits, which cannot be said of any other town.

Previous to 1889 none of the 600 handsome dwellings, churches, stores, hotels and other buildings in the town had been built; but where are streets and all that goes to make a booming city, the reapers that year gathered a luxuriant crop of wheat.

The Richmond and Alleghany Railroad, now a part of the Chesapeake and Ohio system, and the Shenandoah Valley Railroad run parallel to each other closely through the site of Buena Vista city, and along the east bank of North River, from a little below Loch Laird station to a little above Green Forest, a distance of about one and a half miles.

Besides these two railroads, the Lexington branch of the old James River Canal, now used for the distribution of water-power, runs along the bank of the North River, close to the railroads.

The following is a list of the industrial enterprises and business institutions established and in active progress at Buena Vista at this time:

	Capital.
Buena Vista Iron Co.'s Furnace	\$300,000
" " Steel Works	300,000
" " Fire-Clay and Terra Cotta Works	100,000
" " Camimere and Woollen Works	70,000
" " Saddle and Harness Factory	10,000
" " Glass Company	50,000

	Capital.
Buena Vista Paper and Pulp Mills	100,000
" " Steam Tannery	75,000
" " Red Brick Works	20,000
" " Planing Mills	30,000
" " Furniture and Chair Factory	10,000
A. K. Rarig Co., Boiler and Machine Works	300,000
Pennsylvania Investment Co., Manufacturers, Contractors and Builders	150,000
Building, Water and Light Co	41,000
Lumber Yard	20,000
Electric-Light Plant	15,000
Egg-Crate Factory	50,000
Advocate Newspaper and Job Printing Office	5,000
Buena Vista Building and Investment Company, Bankers, now Bank of Buena Vista	100,000
Buena Vista Loan and Trust Company, Bankers	100,000
Wise Wagon Works	25,000
First National Bank	50,000

And in addition to these, which are in active operation, there are a number of "land and investment companies," with offices in the city. Buena Vista was incorporated as a city in January, 1892, with a population of 5,240, having a town charter only two years.

RADFORD.

The city of Radford is situated in Montgomery county, on the Norfolk and Western Railroad, 238 miles west of Norfolk, Va., and on the New River, at the point where the New River division taps the main line. The population in January, 1892, was 5,643, and is steadily growing. Here is the Radford Pipe Foundry Company in operation. The capacity of this plant is 100 tons of pipe per day, with a working force of 400 men. This company has already filled large orders for Baltimore, New York, Philadelphia and other cities.

The Crane Iron Works (not in blast yet) is a large furnace; the company owning extensive ore deposits not more than three miles away, to which a road will be built in the near future. The Radford Stove and Foundry Company will, it is said, resume operations in the near future. There is also in operation the Radford Manufacturing Company, manufacturing sash, doors, blinds, etc. There are three extensive lumber companies and three brick companies. Here also are the repair shops of the Norfolk and Western Railroad Company, working a large force of hands. There are smaller concerns, manufacturing cigars, candy, etc., besides the usual business in mercantile lines. During the financial depression of the last two years the place has steadily forged ahead, and during 1892 there was a healthy building growth, and more houses were built than in any previous year.

There is now in operation a complete system of water-works in one ward of the city, which is soon to be supplemented by a more extensive one, at a cost of near \$30,000. There is now under construction—nearly a mile of track being already laid—a street railway, to be propelled by electricity, said line to be in operation by July 1, 1893.

A franchise has been granted to the Radford Electric Light and Power Company for building and maintaining an electric-light plant. This company has given the required bond, deposited with the city the said bond and a large cash payment, to be forfeited in case of failure to comply with its contract. This plant will be in operation by July 1, 1893. A large ice-manufacturing plant will be run in connection with this plant.

The educational advantages are first-class. There is a graded public school and there are now more than 600 hundred scholars on the rolls. Contracts have been let for the erection of two handsome and commodious school-buildings, one for each ward, to cost between six and seven thousand dollars each. Just across, upon a beautiful knoll, and overlooking the river, which is here spanned by a magnificent iron and steel bridge, 1,500 feet long, and which cost \$85,000, is St. Albans, a classical school for young men, which is attended by representatives from this and other States. There are eight Protestant churches in the city, and the Roman Catholics are making preparations to build one of that faith.

Radford itself is situated upon land which rises in graceful terraces from the river, and upon the highest points the scenery is splendid in the extreme. The health of the climate is equal to that of any on the continent.

The city has a hustings court, with its judge, the clerk and his deputy, the mayor and twelve members of the city council; sergeant and a faithful police force, and the order of the city is as good as that of any of its size in the country.

PETERSBURG, VA.

Petersburg, a city of about 25,000 inhabitants, is advantageously and delightfully situated at the head of tide-water on the Appomattox River, twelve miles west of its confluence with the James. On the north are the picturesque heights of Chesterfield, and on the south are the hills and elevated table-lands of Dinwiddie. As the objective point sought by the Federal army during the last year of the fierce struggle between the North and the South—proving, in fact, the key to the Confederate capital and its surrender, leading practically to the termination of the war—many grand historical associations cluster about the city and its environments. Scarcely a foot of ground in the territory for miles around but was trod by the feet of contending armies, and nearly every farm or field marked some deed of bravery and daring. The great forts almost within sight of the city—certainly within rifle-shot range—are to be preserved as historic spots; and between the long lines of breastworks, where peace and prosperity have supplanted grim-visaged war, beautiful parks and pleasant drives are to spring up in glorious contrast with the scenes of twenty-five years ago.

Petersburg is an inland city, the natural and geographical market of a broad expanse of fertile country which empties its products, in large measure, into the local channels of trade, and furnishes as well liberal supplies to the markets of the North, West and South. This country is watered by numerous streams which are well-stocked with fish, and dotted with forests that will supply timber and fuel for untold years. The Appomattox River is navigable for large vessels to the city's wharves, and affords an important channel of commerce and an unsurpassed water-power.

Petersburg offers exceptionally fine facilities for manufacturing enterprises. The surrounding counties, in which the finest and most productive lands may be had at very reasonable prices, provide an excellent field for the cultivation of diversified crops, to which are to be added the advantages of one of the best markets in the South; for, in truth, the city holds an unique position as a market. The country tributary to it brings forth in abundance cotton, tobacco, peanuts and all the cereals. Herein is found one of the greatest sources of

strength; for while other cities in Virginia may have come into prominence by reason of their association with some particular one or two of these products, Petersburg has for more than half a century been pre-eminently identified with all of them, both as regards the marketing of the raw material and the manufactures.

Petersburg has a larger export trade for manufactured tobacco than any other city in the United States. It ships to all the principal foreign ports, and its annual output exceeds five million pounds. Its manufactures for domestic consumption aggregate as much more. It has some of the most complete and elaborate tobacco manufactories in the country, and many large warehouses for the sale of the leaf. These warehouses annually sell from ten to fifteen million pounds of the raw material.

The nearness of the city to the cotton-producing sections renders it a most desirable point for the manufacture of the staple into cotton fabrics. Here are the cotton fields almost at the very doors of the factories, with the market for planters in very sight of the manufacturers. In addition to this great advantage is the superb water-power within the limits of the city and extending for many miles west along the lines of the canals and river, and in immediate proximity to the Norfolk and Western Railroad.

The great grain mills of Petersburg form one of the most important of its industrial features. The volume of the flour and meal products largely exceeds an annual value of one million dollars. For the storage and distribution of grain a large elevator has been erected. The peanut industry has assumed mammoth proportions. A great portion of the peanut crop of Virginia and North Carolina is handled in Petersburg, and eight large factories are in constant operation assorting, cleaning and preparing the nuts for market. During the season of 1892 175,000 bushels of peanuts were sold in this market.

There are large iron works here, silk mills, trunk factories, butter-dish, berry-basket, crate, and hat factories, and many other industries in successful operation. The immense water-power here would run, if applied, hundreds of the largest factories. In all respects, as regards social considerations, cheapness of living, and educational advantages, Petersburg holds out many attractions.

The climate is pleasant; labor plentiful. Contests between labor and capital are unknown. The facilities for transportation of freight and produce are ample. Great trunk lines of railroad and the Old Dominion Steamship Line and the Clyde Line furnish ample transportation for trade and travel by land and water.

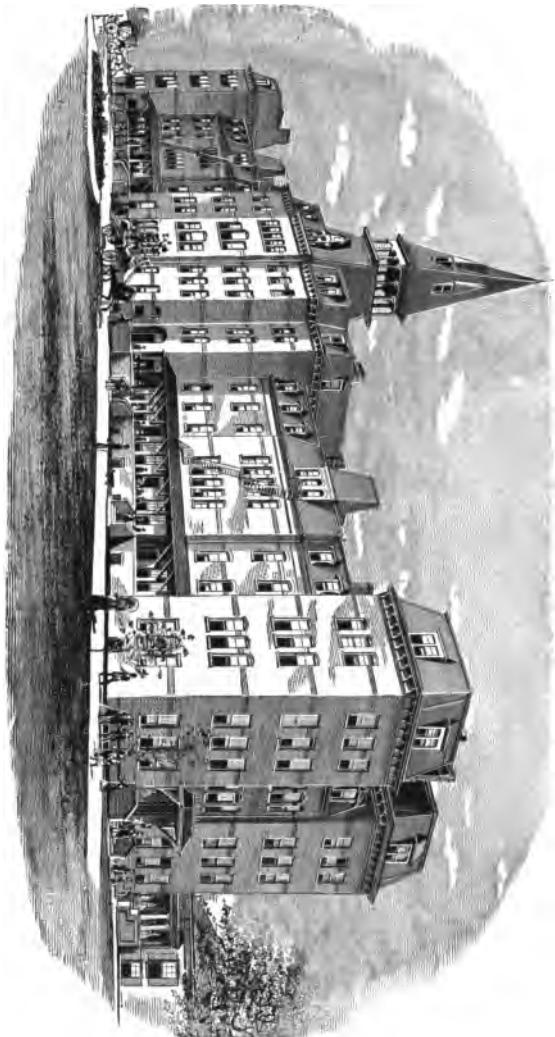
Inexhaustible beds of granite lie just beneath the soil in the counties around, easily reached by railroads.

As a place of residence Petersburg is specially delightful. The location is healthy; its sanitary condition excellent; streets are paved; beautiful parks, with trees and flowers. It has street railways, and is lighted by gas and electricity.

The city is noted for the culture and refinement of its people. It has fine churches, good public schools, and private schools for males and females. The colored normal school is located here, and the lunatic asylum for colored people of both sexes is situated on its suburbs.

One of the principal objects of interest to the antiquarian is old Blandford church. It stands on a hill just out of the city. It has been repaired just

VIRGINIA NORMAL AND COLLEGIATE INSTITUTE—(Colored.)
Petersburg, Va.





enough to prevent it falling into absolute decay, and is covered with luxuriant ivy.

A part of the city is made interesting by its antique residences, telling of another day and another people, different in many things from those that now tread its streets in the bustle of active business life.

NORTH DANVILLE.

North Danville is situated on the opposite side of the Dan River from the city of Danville. North Danville was incorporated in 1877 with about 250 inhabitants. It contains at present about 5,000 inhabitants. The Methodist, Baptist, Presbyterian and Episcopal denominations own churches here, and church property exceeds \$50,000. The public schools are of the highest order and well sustained.

The town owns an electric-light plant, which, with gas, furnishes all necessary light. A line of street cars runs through the town. There are numerous mercantile establishments, planing mills and wagon factories. The repairing shops of the Richmond and Danville Railroad Company are situated at this point. The magnificent water-power partly utilized by the Riverside cotton mills, with the new addition now in process of construction, will be, when completed, the largest cotton mills in the South, and give employment to hundreds of hands. The average death rate for 1892 was four per month. This healthiness is attributable to the fact that the town has fine water and splendid natural drainage.

There is only one bar-room in the city.

CHARLOTTESVILLE

Is the county-seat of Albemarle, one of the most important counties in the State. It is situated at the junction of the Richmond and Danville and Chesapeake and Ohio railroads—trunk lines running north and south, east and west—and is the end of each division on each road. It has sixteen daily passenger trains, with direct connection with ocean steamers for Europe and South America. The city has a judge, mayor, council and police force.

The University of Virginia is located here, giving free tuition to every Virginia student. This institution expends annually in the community \$350,000. There are also Pantop's Academy, Jones' Classical School, the Miller Manual-Labor School (300 pupils, which is free to all white orphan children of Charlottesville and the county of Albemarle). Piedmont Female Institute, Albemarle Female Institute and Charlottesville Seminary are located here. This community is unsurpassed in educational advantages.

Charlottesville has a free mail delivery, splendid street-car line, electric-light plant and gas plant, a new opera house and many handsome buildings.

The following enterprises are in successful operation: Charlottesville woollen mills, the largest in the South—capital, \$250,000; Armstrong knitting factory, employing about 100 hands; Monticello hosiery factory, employing over 100 hands; three planing mills, two sash, door and blind factories, two carriage and wagon factories, three cigar factories, Hotopp wine cellars, Monticello Wine Company, foundry and machine shop, three brick plants, flouring mill, two drug factories, telephone exchange, ice factory, two bottling works, largest slate-pencil factory in the United States, mattress factory, steam laundry, four

newspapers, slate and building-stone quarries, dummy and belt-line railway, box factory, soap factory.

According to the census, Charlottesville has doubled its population since 1880, and has increased over 1,000 since 1890.

Monticello, the home of Jefferson, and the home of Monroe are among the historic attractions around Charlottesville.

Over \$450,000 were spent in building improvements in Charlottesville last year.

Charlottesville has a reservoir holding two hundred million gallons of water, five miles from the town in the mountains. It is 186 feet above the city.

The different denominations have handsome church edifices, three of which belong to the colored people.

WINCHESTER.

The site upon which Winchester, Va., is built was recognized and occupied by Washington as an important point in the wars with the French and Indians for the occupation of the country then known as the West. Washington built the first fort here west of the Blue Ridge Mountains, some portions of which are still standing. Tradition places the nucleus of a town here as early as 1732.

The records show that a court was held here in 1748.

Winchester first became a chartered town in the year 1852.

Winchester is the county-seat of Frederick county, the nearest seaboard town and the recognized metropolis of the lower Valley—the place assigned by nature as the receiving and distributing point of all this section of country.

Here, the world knows, was the highway of the contending forces in all that bloody contest inaugurated by the John Brown raid. No place, perhaps, in all the land was more stubbornly contended for than was Winchester. No need to speak of the devastation and desolation by fire and sword which left the country so despoiled that a prominent actor said that a crow might not pass over it without carrying his rations with him.

The climate is unsurpassed, this being an elevated region, and surrounded by mountains. It is out of the reach of the malarial and epidemic diseases that prevail elsewhere, and protected by the mountain ranges from the chilling and devastating winter blasts.

Eight macadamized roads radiate from Winchester as a centre to all points of the compass. There are three railroads centering here, and one other passing within eight miles, putting it in quick communication with the East, North, West and South.

There are two extensive steam-roller flouring mills, six or eight water mills, and three large elevators over-worked to handle the surplus wheat; three steam tanneries, second to very few anywhere, with several smaller ones; one large steam quercitron and sumac factory, all of the products of which are shipped away; gloves, the Winchester tanned leather, which have a national reputation. There are three flourishing female seminaries, one male academy; two public school buildings, one for white and one for colored. It is well supplied with hotels (one recently erected at a cost of \$100,000) and a number of first-class boarding-houses. Water is of the purest crystal spring water, which is fed by gravitation to the system of pipes that supply the city, and never sees the light of day until it gushes from the hydrant just where you want it. The markets are supplied with the best of everything, fresh from the

adjacent fields. Streets lighted with electricity; business and dwelling-houses with electricity and gas.

Winchester has two banks, with capital and enterprise sufficient to meet all requirements. There are thirteen churches, four of which are colored; three steam fire-engine companies well equipped; two building and loan associations; three lively newspapers; a national cemetery, and a combined citizens' and Confederate cemetery of forty acres, all of which are well cared for.

The mercantile interests are extensive and prosperous, both wholesale and retail, and, where conducted with enterprise and capital, never has a merchant been known to fail here.

Mechanics and artisans capable and trustworthy. Population enterprising and public-spirited. Public buildings and enterprises valued at \$400,000. Population, 6,000. Tax rate—State, 40 cents; city, 70 cents on one hundred dollars.

TOWNS.

The law provides for the incorporation of towns of less than 5,000 inhabitants, and such charters grant limited powers and police regulations and provide for special taxation, but do not sever the connection of these towns with the counties in which they are situated. Some of these charters are quite old, and although many of these claim to have the requisite number to acquire city charters, they have from economical or other causes made no move for new charters. A description of such as make the claim and have furnished statistics of growth in population, manufactures, trade and finance is given below, to-wit: Lexington, Pulaski City, Wytheville, Salem, Suffolk, Hampton, South Boston, and Berkley. Besides these are many other incorporated towns which have every prospect of becoming small cities, and although they do not claim a near approach in population to the legal requisite, they are thriving and growing towns. In the Southwest, Abingdon and Marion; in Appalachia, Pocahontas and Graham; in the Valley, Middletown, Berryville, Strasburg, Front Royal, Woodstock, Harrisonburg, Luray, Waynesboro and Fincastle; in Piedmont, Warrenton, Leesburg, Manassas, Culpeper, Orange, Bedford City; in Middle Virginia, Chatham, Keysville, Farmville, Chase City, Scottsville, Gordonsville, Blackstone; in Tidewater, Cape Charles City, West Point, Claremont, Courtland, Emporia, Smithfield and Ashland.

A description of the small towns is given in the record of the counties in which they are situated.

LEXINGTON.

Lexington is the county-seat of Rockbridge, one of the counties of the Valley, and is about forty miles from Lynchburg, about fourteen miles from the Natural Bridge, and seven miles from Buena Vista. It has a population of about 5,000. In October, 1777, the General Assembly passed an act for laying out a town to be called Lexington; the town to be about 1,300 feet in length by 900 feet in width. The limits have been since extended several times, until now it covers an area of one and one-fourth miles in length by three-fourths of a mile in width. The town is situated in nearly the centre of the great Valley of Virginia, between the Blue Ridge and Alleghany ranges of mountains and midway between the Potomac River and the Tennessee State line. It is noted for the beauty of its situation, appearing to nestle among the sloping hills on the left bank of the North River twenty miles from its junction with the James at Balcony Falls. Lexington is lighted by electricity. The plant is owned by a company and represents a capital of \$25,000. The water supply of the town is ample and unsurpassed as to quality. The water is piped from springs in the brushy hills within three miles of the town, where it is distributed by means of mains and service pipes. The flow is by gravity, and much

expense is saved and some inconvenience, as the pipes cannot get out of order. The town has a fine fire company.

The real and personal property owned by churches in town and county, by Washington and Lee University, and the Virginia Military Institute, and exempt from taxation by law, is safely estimated at \$1,325,000. The capital employed in business, banks, merchants, and manufactures, as estimated for taxation, amounts to \$325,000. These amounts, added to the assessed value of the real and personal property, give \$3,100,000 as the actual amounts of these values of the town. Lexington is justly proud of its two great institutions of learning and of its churches, as well as the many associations that hang around them. Grace Memorial church (Episcopal), which was erected in memory of Robert E. Lee, is built of stone, in the Gothic style of architecture. With its ivy-covered walls and beautiful windows, the spire of a nobler pile does not point heavenward anywhere in the South. Trinity Methodist Episcopal Church, South, is a new and beautiful building only completed a year or two since.

There is a large brick public school-house recently erected at the cost of about \$12,000. In the public schools there are eight white teachers and 200 scholars, five colored teachers and 220 pupils. There are five private schools, representing with their principals and teachers 160 scholars. Washington and Lee University, formerly Washington College, and the Virginia Military Institute are located here. (See chapter on Education.)

Lexington was the home of Stonewall Jackson before the war. He died here and was buried among his own people. Robert E. Lee made his home here after the war, and gave to the University the added lustre of his great name.

SOUTH BOSTON.

South Boston is in what is known as the bright tobacco belt of Virginia, within 109 miles of Richmond. It is built upon a sloping hill above Dan River, where the Richmond and Danville and Durham roads cross each other. It is well-drained, healthful and has good water. It is surrounded by a thickly-settled and prosperous back country, and it is the market town for a large section of the border of Virginia and North Carolina. Its growth has been natural, steady and permanent; its position is now secure, and its future bright and promising.

In 1870 South Boston was only a little hamlet of probably 250 people. In 1884 it was incorporated, and is expecting soon to become a legal city. Its business houses are of brick, and would do credit to a much larger place. Its stores do a large business, both wholesale and retail. Its large and commodious warehouses furnish abundant facilities for handling tobacco. The market of this staple has succeeded and gradually enlarged its territory until now it ranks fifth in the markets of Virginia, selling annually seven to eight million pounds of tobacco.

The town owns a splendid system of water-works and an electric plant for lighting the streets.

South Boston has two large establishments for the manufacture of tobacco; also, large flour mills, furniture factories, and many smaller industries; two banks, two large graded schools, seven churches and two newspapers.

SUFFOLK.

The town of Suffolk lies in Nansemond county, Va., and is the county-seat. It enjoys many advantages as a business centre and distributing point, being situated on the main lines of the Norfolk and Western and Seaboard and Roanoke, Atlantic and Danville, the Norfolk and Carolina railroads, and is the terminus of the Suffolk and Carolina and the Suffolk Lumber Company's narrow-gauge railroad. It is also pleasantly situated on the Nansemond River, which is sufficiently deep at this point to admit vessels drawing fourteen feet of water. From the railroad Suffolk does not show at its best; no one can imagine in passing the size, beauty and comfort of the town. It has fine churches, busy streets, elegant residences, active mills and factories, well-kept hotels, wide streets, beautiful promenades, and other unmistakable evidences of commercial and social welfare. The population in 1856 was 1,200; in 1883, 1,963, and is now estimated as having not less than 6,000 within its corporate limits and suburbs. Suffolk has three chartered female schools, one military collegiate institute; also several private and two graded schools. It has a court-house and jail, comparing favorably with other institutions of the kind through the State. Two steamboat lines afford daily connection with Norfolk and the landings on Nansemond River and Baltimore.

The town is well furnished with water from Lake Kilby, a picturesque lake, about three-fourths of a mile distant. This water is used for all purposes. It is one of the best systems in Virginia, and is furnished by the Suffolk and Portsmouth Water and Light Company.

A street-car line passes through the main thoroughfares of the town. Suffolk has also the best equipped fire department in this section of the country, and no town is more sure of protection in case of fire.

MANUFACTURES.

There are now located in the town twelve or fifteen valuable manufacturing plants, all of which are active. The climate and situation are both favorable to health, as is shown by the low rate of mortality—about 16 per 1,000 per annum. There is no malaria around Suffolk; being built upon many hills, its natural drainage is perfect. Suffolk has everything needed in the way of transportation, and being exempt from the searching winds from the northeast or from excessive heat in summer, it offers an excellent sanitarium for invalids during the winter months.

PULASKI CITY

Is a flourishing town of few years' growth, of nearly 5,000 inhabitants. It is situated in the heart of "the great Southwest," upon the Norfolk and Western railroad, and holds the key of the Cripple Creek ore fields, noted for iron and zinc ores.

Pulaski has ten great iron furnaces. The Pulaski milling company has a large roller flouring mill, and a planing mill and large wood-working manufactory for making plain and ornamental wood-work. Industrially speaking, no town in Virginia is more favorably located for manufacturing purposes on a large scale than Pulaski, being in the centre of the richest mineral belt in the South. The city boasts one of the finest hotels in the State; a number of handsome churches and business houses, and many fine residences. By the

census of 1890 the city was credited with only 2,100 inhabitants, and now approximates 5,000. It has two banks—the National, with \$50,000 capital stock; the Loan and Trust Company, with a capital of \$75,000. There are a number of fine stone buildings in the city, built of stone from the fine sandstone quarries close to the city limits. There is a large and handsome building for the public school, with all improvements and with five teachers, five or six hundred scholars every session. There are also several excellent private schools.

The celebrated Bertha zinc works are located here, making over four thousand tons of zinc-spelter a year, which gave the town its start, and which has resulted in changing a water station into a city.

Railroad interests at this place are very considerable. The Cripple Creek branch and the Altona coal road, belonging to the Norfolk and Western, centre here. The receipts of the Norfolk and Western at this office amount to \$25,000 per month; their employees are paid here as much as \$5,000 per month.

This city is 2,000 feet above the level of the sea, and the climate delightful. In the spring, summer and autumn there are more than a thousand men employed in the new industries, among them many skilled workmen receiving good wages promptly.

SALEM, VA.

Salem, the capital of Roanoke county, is situated in a beautiful valley, through which flows the Roanoke River, and around which rise the Blue Ridge and Alleghany mountains.

It is located on the main line of the Norfolk and Western Railroad, and is connected with Roanoke by a dummy railway, which will soon be changed to an electric line.

The water supply, which is sufficient for a city of 50,000 inhabitants, is derived from several large springs owned by the town. The streets are macadamized and the walks paved with brick.

In two years the population increased from 1,700 to 5,000. The industries and enterprises actually in operation are: The furnace company, employing 100 hands, and making, since it was "blown in," an average of 100 tons of iron per day. The Leas & McVitty tannery employs 60 hands, and has a capacity of 30,000 hides per year; Holstein woollen mills affords employment for more than 100 men and women; Southern carriage works employs 50 skilled workmen; the Salem machine works (manufacturers of roller-mill machinery), 25 hands; the wagon manufacturing company, 28 hands; Salem carriage company, 14 hands; brick works (run by machinery), 25 hands; pressed brick works, 25 hands; roller flour mills, capacity seventy-five barrels per day; roller flour mills, capacity fifty barrels per day; the crystal ice company, capacity twelve tons per day. There are also many smaller industries. The principal offices of the Bonsack and Comas cigarette-machine companies are located here.

The educational advantages are not surpassed by any town of equal size in the State. Roanoke College is widely known and justly celebrated. The Salem Female Seminary, although only established two years ago, is rapidly gaining a reputation. The graded schools (both white and colored) are conducted by capable teachers, and rank among the first in the State in the report of the Superintendent of Public Instruction. The Baptist Orphanage, a home and school for children, was established in 1891, and already cares for fifty boys and girls of tender years. The churches are prosperous and well attended. The

various denominations which have houses for worship are: Methodist (3), Presbyterian, Lutheran, Baptist, Episcopal, Catholic and Christian.

The financial institutions are: The Farmers National Bank, capital \$75,000; the Loan and Trust Company, capital \$50,000; Bank of Salem, capital \$69,300; all of which are doing a safe and profitable business.

The hotels, Salem and Lucerne, are handsome brick structures, lighted by gas and electricity, heated by steam, supplied with hot and cold water, fitted with all modern appliances conducive to comfort, and furnished throughout with taste and elegance.

BERKLEY.

Berkley is situated on the Elizabeth River, about one-fourth of a mile from Norfolk and the same from Portsmouth. The river bounds it on two sides and is navigable for the largest vessels. Twenty years ago Berkley had only 500 inhabitants; now its population is 5,000. This growth has been due to no "boom" or other extraordinary cause for activity, but to increase of business, and a steady increase in population due to its natural advantages.

There is a steam-ferry that leaves nothing to be desired for the travelling public between Berkley and Portsmouth and Norfolk. The boat leaves and returns to Berkley every twenty minutes. The town has mercantile establishments sufficient for its needs. It is the most accessible shipping point for the pine forests of North Carolina, and this has resulted in establishing four large lumber manufactories besides other mills. The manufactured lumber amounts to 175,000,000 feet, and plain lumber amounting to millions of feet is shipped to all parts of the Union. There are two large knitting mills in successful operation. It has seven white and six colored churches; two white and one colored school, and several private schools. There are two marine railways for the building and docking of vessels; two machine shops, besides three large machine shops of the Norfolk and Southern Railroad, which has its terminus at this point, and is the main outlet to the commerce of East North Carolina. The Berkley and South Norfolk Water and Electric-Light Company has been organized.

WYTHEVILLE.

The town of Wytheville, on the main line of the Norfolk and Western Railroad, is beautifully situated in the midst of the mountains of Southwest Virginia, at an elevation of 2,300 feet above the level of the sea, near the summit line between the Atlantic and the Mississippi. Altitude and location midway between the North and South give to it peculiar advantages, among which not the least are pure fresh water, mountain air, and freedom from epidemic diseases. Near it are fine mineral springs, free to all, while the famous Cove lithia spring is near by. Its line of railroad is one of the most enterprising systems of railroads in the country.

Wytheville is the county-seat of Wythe county, and is a commercial resort and educational centre of the Southwest. It is noted for its churches, of which there are ten; its fine public schools, female college and its public library. It has a fine fair-ground, with one of the best race-courses in the Southwest. The present population of Wytheville is 4,000, and is rapidly increasing in all that goes to make up solid prosperity. Three banks, an insurance company, several first-class hotels, and a good trade with the surrounding country, are but a beginning of what Wytheville expects in the near future.

HAMPTON.

The town of Hampton is beautifully situated on a branch of Hampton Roads, a harbor full of interesting associations, both local and national. It is situated on the southern extremity of Virginia's great peninsula, eighty miles from Richmond, and connected with that city by the Chesapeake and Ohio Railway. It is fifteen miles from Norfolk and Portsmouth; Old Point Comfort is only two miles distant.

Hampton has exceptionally complete transportation facilities, numerous railway and steamship lines, forming direct connection with the large cities of the North and South.

The climate is remarkably fine. No cyclone, no blizzard ever comes here, and danger of epidemic diseases is seldom feared. For this cause the National Home for disabled soldiers was put here. The present population is about 5,000.

Hampton is also particularly favored by having several institutions that expend large sums of money annually for buildings, and the necessities of life and labor. The National Home alone expends \$1,500,000 during the year.

Accommodation for travellers and guests is provided by good hotels. Good water is abundant, and a fine system of water-works is in process of construction.

Several religious denominations have handsome churches. The Episcopal boasts of old St. John's church, which was built, it is said, in 1680; it has been repaired and fitted up for use, and is very beautiful.

The Normal Institute for negro and Indian students is located here, with about 650 students, and an efficient corps of teachers and professors.

COUNTIES.

For the convenience of the reader the counties of the State are first catalogued in the natural divisions and subdivisions of the State and then follow in full detail in alphabetical order:

TIDEWATER VIRGINIA BY COUNTIES.

NATURAL SUBDIVISIONS.

	COUNTIES.
The first peninsula, or "The Northern Neck"	{ King George, Westmoreland, Richmond, Northumberland, Lancaster.
The second, or Middlesex Peninsula	{ Essex, Middlesex.
The third, or Gloucester Peninsula	{ King and Queen, Mathews, Gloucester.
The fourth—the King William or Pamunkey Peninsula . . .	{ Caroline, King William.
The fifth, or "The Peninsula"	{ Hanover, New Kent, James City, York, Warwick, Elizabeth City.
The sixth—Richmond or Chickahominy Peninsula	{ Henrico, Charles City.
The seventh, or Southside Peninsula	{ Prince George, Surry, Sussex, Southampton, Isle of Wight, Nansemond.
The eighth, or Norfolk Peninsula	{ Norfolk, Princess Anne.
The ninth peninsula—"The Eastern Shore".	{ Accomac, Northampton.

MIDDLE VIRGINIA BY COUNTIES.

NATURAL SUBDIVISIONS.

Northside Group.

	COUNTIES.
Potomac Basin	{ Fairfax, Alexandria, Prince William, Stafford.
Pamunkey Basin	{ Spotsylvania, Louisa.
James Basin	{ Fluvanna, Goochland.
James-Appomattox Basin	{ Buckingham, Cumberland, Powhatan, Chesterfield, Appomattox.
Appomattox Basin	{ Prince Edward, Amelia.

Southside Group.

Nottoway Basin	{ Dinwiddie, Nottoway.
Meherrin Basin	{ Lunenburg, Brunswick, Greenvile.
Roanoke Basin	{ Campbell, Charlotte, Pittsylvania, Halifax, Mecklenburg.

COUNTIES OF PIEDMONT VIRGINIA.

NATURAL SUBDIVISIONS.

	COUNTIES.
Potomac Waters	{ Loudoun, Fauquier.
Rappahannock Waters	{ Culpeper, Rappahannock, Madison, Greene, Orange.
James Waters	{ Albemarle, Nelson, Amherst.

Staunton Waters { Bedford,
Franklin

Dan Waters { Henry,
Patrick.

COUNTIES OF THE GREAT VALLEY.

NATURAL SUBDIVISIONS.

The Shenandoah Valley { Frederick,
Clarke,
Warren,
Shenandoah,
Page,
Rockingham
Augusta.

The James River Valley { Rockbridge,
Botetourt.

The Roanoke Valley { Roanoke.

The New River or Kanawha Valley { Montgomery,
Pulaski,
Wythe.

The Holston or Tennessee Valley { Smyth,
Washington.

BLUE RIDGE BY COUNTIES.

Counties { Floyd,
Carroll,
Grayson.

COUNTIES OF APPALACHIA.

NATURAL SUBDIVISIONS.

Sources of James { Highland,
Bath,
Alleghany,
Craig.

New River Country { Giles,
Bland.

Clinch River Country { Tazewell,
Russell,
Scott,
Lee.

Sources of Big Sandy, or Trans-Appalachia { Buchanan,
Wise,
Dickenson.

ACCOMAC

Is the northernmost of the two counties belonging in Virginia on the "Eastern Shore" Peninsula. It contains 252,945 acres of land, and a population of—white, 17,547; colored, 9,730; total, 27,277; males, 13,778; females, 13,499. It is about forty miles long, with an average width of ten miles; the Atlantic Ocean bounding it on the east and the Chesapeake Bay on the west. There are numerous arms and inlets from both, extending into the main, and a chain of islands on the ocean side acting as breakwaters to the higher lands. The salt air from the surrounding sea and the high temperature of the gulf-stream make the climate milder and less liable to frost than other localities much further south.

The State weather service of the Department of Agriculture, at Bird's Nest, reports monthly average temperature for year ending 30th November, 1892, 58.1°; monthly total precipitation for the same period, 46.80 inches; average monthly precipitation, 3.90 inches.

The soil of this section is a light sandy loam, warm and easily tilled; the sub-soil is red clay. Corn and oats were long the staple crops of the Eastern Shore; but with the unsurpassed facilities for marketing small fruits and vegetables, the latter industry has come to be the principal one. This region is one of the principal market gardens for the great cities of the North. The climate is pleasant and salubrious, the salt air being wafted over the Peninsula from almost every point of the compass.

LIVE STOCK.

	Number.	Value.
Horses and mules	5,166	\$251,153
Cattle	6,529	57,467
Sheep	1,984	2,670
Hogs	10,808	24,629

In 1880 Accomac stood at the head of the list in the production of sweet potatoes, quadrupling any county in the State.

Transportation communication with market is by steamboat and sailing vessels. A fine line of steamers plies regularly between this county and Baltimore. In this way the staple crops, the sweet and Irish potatoes, the onions, peas, cabbages and other vegetables, and the small fruits are sent to the markets of Baltimore, Philadelphia and New York, bringing an annual return to the producers of a million and a half of dollars.

In addition to these facilities, the New York, Philadelphia and Norfolk Railway from Delmar, on the dividing line between the States of Delaware and Maryland, to Cape Charles City, near the mouth of Chesapeake Bay, and thence making the city of Norfolk by a line of fast and elegant steamers, completes the chain of the great short line, north and south, and lessens the time of transit some ten hours between New York and points south, and puts the truckers and fruit-growers of this Peninsula in close communication with New York and Philadelphia. The road is admirably located along the central line of this county and Northampton, almost an air-line, with a maximum grade of less than ten feet, first-class steel rails and an equipment unsurpassed.

There are twenty saw-mills in this county converting into lumber its growth of pine and oak, chestnut, beech, walnut, gum and cedar.

No county of the State has improved more rapidly than this within the last few years. The building of the New York, Philadelphia and Norfolk Railroad

is quietly but rapidly and surely working out its destiny, which is to be the vegetable, fruit, fish and shell-fish supplying section for the great cities of the country.

Game, especially water fowl, is plentiful, and all the birds of Tidewater Virginia found in the forest, fields and swamps are to be found in Accomac. Predatory birds, from the ubiquitous crow to the gray eagle, are found on the coast. Small animals of the usual kind are found in the waters and fields.

Number of public schools: White, 79; colored, 22; total, 101. There are several fine private schools of high grade.

Churches of four or five denominations are numerous and conveniently located.

Newspapers: *Peninsula Enterprise*, Accomac Courthouse; *Democrat* (weekly), Onancock.

County levy: Tax for county expenses—50 cents capitation tax and 20 cents on the \$100 assessed value of real and personal property.

ALBEMARLE

Was formed in 1744 from Goochland county. It is thirty-five miles long, with a mean breadth of twenty miles. It is mountainous and rolling. The soil is dark, rich red clay. The Albemarle of 1744 embraced all of what is now known as Albemarle, Buckingham, Amherst, Fluvanna, Nelson, and a part of Appomattox.

Albemarle county lies close to the geographical centre of the State of Virginia, and is the fifth largest county in it, having an area of 755 square miles, being 459,238 acres, with a population of 32,379—white, 18,252; colored, 14,127; males, 15,756; females, 16,623. The western portion of the county lies in the Blue Ridge and the eastern in Midland Virginia, mainly in the noted Piedmont region of the State; a region famous for the fertility of its soils, the abundance and excellence of its waters, the beauty of its scenery and the salubrity of its climate.

The average elevation of Midland Albemarle above tide is about 300 feet. Piedmont Albemarle is about 400 feet in the eastern part, rising to 1,000 in the western, where it merges into the Blue Ridge, which at Jarman's Gap rises to the height of 3,161 feet above tide.

The James River flows along the southeastern boundary of the county and receives the Rockfish, Hardware and Rivanna rivers, which, with their tributaries, Mechum's, Moorman's and Lynch rivers, and Doyles', Buck Mountain and Buck Island creeks, rising in the western part of the county, flow towards the southeast, draining the county thoroughly.

Albemarle lies far enough to the south, and is sufficiently well-protected from cold northwest winds by the Blue Ridge Mountains to possess a mild winter climate, while in the summer its elevation and proximity to the mountains temper the sun's heat so that it enjoys quite a reputation as an agreeable summer retreat.

Albemarle has always been exempted from the ravages of the terrible cyclones and tornadoes that have done so much damage in other parts of our country.

The county enjoys a mean annual temperature of 55°, the minimum of winter seldom falling lower than +10. The mean temperature of the months of June, July and August is about 72° F., and of December, January and February about 35.8°. The past winter was the coldest for twenty years.

The annual rainfall averages forty-five inches, and is well distributed throughout the year.

Albemarle county possesses deposits of iron ore, slate, soapstone and building stones, which have been, and some are now, worked with profit. Besides these there are deposits of graphite, zinc and clay, which may develop in the future and become valuable. Slaty rocks are abundant in Albemarle, and in the neighborhood of Slate Hill church, which is about seven miles southeast of Charlottesville, a deposit of this valuable material has long been worked. The Albemarle Slate Company has operated the deposit very successfully for a number of years, and now employs seventy-five persons in the manufacture of slate pencils—their sole product at present. There is a vein of slate so soft and free from grit as to make the finest quality of slate pencils known in the trade. Adjacent to this property lies another deposit, which is larger and contains a greater variety of valuable slate than the other. At both of these deposits valuable slate for manufacture into mantels, window-caps, sills, coffins, etc., is also found.

ZINC.

On the eastern slope of what is known as Lead-Mine Mountain, there exists a vein of mineral which, during the war, was operated by the Confederates for lead. The zinc blende is more abundant than the galena.

The timber consists of oak, chestnut, locust, pine, hickory, poplar, sycamore, maple, beech, walnut, gum and dogwood.

The productions are corn, wheat, oats, tobacco, grass and sorghum.

Large sections of the county are eminently adapted to grazing, and the cultivated grasses always flourish, on large areas, under the care of the intelligent farmer.

Fruit-growing is now an important interest, and is yearly attracting the attention of wide-awake farmers.

The orchards have long been celebrated for the excellence of their fruit; and the vineyards, now covering hundreds of acres, not only supply hundreds of tons of table fruit for the markets of the country, but supply two prosperous wine-cellars with the fruit from which the famous Virginia claret wines are made.

The foot-hills are the natural home of the apple, and the culture of this fruit has long been a leading feature. The apple which is acknowledged, on both sides of the Atlantic, to be the best in the world, the Albemarle pippin, has its original home here.

The favorite market apple of Albemarle, except the pippin, is the winesap, though it never brings the price which the pippin does.

Albemarle ought to be the site of the most profitable peach orchards in the State. Those who are growing peaches in this section are doing well.

The cherry thrives everywhere in Albemarle, and the cultivation of improved varieties is profitable.

The grape is the great commercial fruit of the county. Near Charlottesville Mr. Hotopp (at the suggestion of an old Swiss, Sol. Seiler, who had lived here for long years before) conceived the idea that grape-culture would pay here as an industry. In 1866-'67 Mr. Hotopp planted out some grapes, with a view to shipping them for table use to some of the Northern cities. Mr. Hotopp utilized his common house-cellars for converting his cultivated grapes not shipped for table use into dry wines—red and white.

The Monticello Wine Company was chartered in May, 1873; a good building was erected and properly furnished with all the necessary apparatus for the work, and placed under the charge of Mr. A. Russow. The large wine-cellar of Mr. Hotopp, together with a few smaller establishments, furnish at all times a safe and sure home market for the grapes raised in this and adjoining counties. The products of these cellars are of the highest excellence. They are far superior to the average wine placed on the market.

From the four to six thousand gallons produced by the Monticello Wine Company and Hotopp in 1873-'74, the product has steadily increased to some 50,000 gallons annually by each; besides, a goodly quantity—two or three barrels to the family—is made for private use by many of the grape-growers. This year the Monticello Wine Company made 68,000 gallons of wine.

It is not claimed that Albemarle is a cattle county *par excellence*, but stock-raising and feeding have a prominent place in the general farming practiced by the best managers. There are several fine herds of thoroughbred cattle in the county. Number of cattle, 10,536; value, \$123,919.

This county offers great advantages for dairying, and is finely adapted to sheep-raising. The large, long-wooled breeds—Cotswold, Leicesters, and Lincolnshires—attain to fine sizes, and produce heavy fleeces upon the rich and luxuriant grasses of the Piedmont portions of the county; while the finer and medium wool breeds—Merino, Southdowns, and Shropshiredowns—thrive well in those portions of the county where the grasses are less luxuriant, and crosses between the long and short-wool breeds thrive and do well in all portions of it. Number of sheep, 7,698; value, \$20,812.

Albemarle has always had blooded horses, and much attention has been given to different improved breeds. Ellerslie, the stock farm of Captain Hancock, made famous as the home of Eolus and his splendid colts, is about eight miles from Charlottesville, on the slope of Carter's Mountain. Captain Hancock's adventure and wonderful success with thoroughbreds began with the establishment of this stock farm. Number of horses and mules in the county, 6,079; value, \$299,380.

All farmers in the county raise more or less pork. Number of hogs, 7,347; value, \$17,218; also 41 goats; value, \$100.

Poultry and bees are profitable small industries.

No other county possesses educational advantages equal to those of Albemarle. Its free-school system is rapidly attaining to that high standard of excellence and efficiency which has always characterized its numerous private schools for males and females. Number of public schools: White, 81; colored, 46; total, 127. These advantages consist of the University of Virginia and the Miller Manual-Labor School; one at Charlottesville and the other at Crozet, with their splendid endowments and wide range of studies almost as free as the public schools. (For description of these institutions, see chapter "Education.") Charlottesville is the county-seat, a city of over 5,000 inhabitants. (See "Cities.") Scottsville is a thriving commercial town, and there are numerous thriving villages.

TRANSPORTATION.

The Chesapeake and Ohio runs through the county northwest to southeast, and has eighteen stations; the Richmond and Danville through from north to south, with ten stations. The James River division of the Chesapeake and Ohio (late the R. and A.) runs down James River on the eastern boundary of the

county from Howardsville to the Fluvanna line. County roads are "dirt roads," and are unusually good.

MANUFACTORIES.

There is one large and successful woollen mill at Charlottesville, bringing out large quantities of very fine goods; two knitting mills, and about twenty flouring mills, besides grist and saw-mills, supplying the wants of the people.

The fish of this county are black bass, southern chub, white and horned chub, perch and mountain trout.

Wild animals: An occasional bear, wildcats, and some deer, foxes, squirrels, hares, raccoons, opossums in plenty.

Wild fowl and birds: Wild turkey, pheasant, partridge and woodcock, mocking-birds, thrushes, robins, red birds, cat birds, orioles larks and other songsters, with owls, hawks, crows and buzzards.

Newspapers: In Charlottesville the *Jeffersonian Republican and Chronicle*, of long standing and good circulation, and the Scottsville *Courier*.

Churches, 85—Baptist, Methodist, Episcopal, Presbyterian, Disciples, Dunkards and Catholic. Charlottesville has a Hebrew synagogue.

ALEXANDRIA

Was originally a part of Fairfax. Having been ceded to the General Government as a portion of the District of Columbia, and receded to Virginia in 1847, it was organized into a county. The area is very small, being only ten miles long and five miles wide, with 20,288 acres. The population, including Alexandria city, is 18,597—white, 11,381; colored, 7,236; males, 9,106; females, 9,481.

The soil of this county is well suited for market gardens, and the proximity of Alexandria city and Washington give great advantages in this respect, and for dairy farming. Washington is rapidly becoming one of the greatest cities of the country, and lands in the vicinity are fast enhancing in value.

PRODUCTIONS.

Wheat, oats, corn, buckwheat, millet, clover, timothy, apples, pears, peaches, cherries, raspberries, blackberries and strawberries. Five florists have extensive hot-houses and grounds here.

This county lies along the south bank of the Potomac River, with the District of Columbia, containing the Federal capital, Washington city, and Georgetown, on the opposite bank. The county-seat is the very considerable town of Alexandria, on the Potomac, which has a population of about 14,000.

The commercial advantages of Alexandria city and county are unsurpassed, the facilities for shipping and means of access to market being all that could be desired. The river, here a mile wide, is navigable for the largest vessels, with a depth of thirty-five feet at the wharves.

There are five large dairies, marketing milk and butter in Washington and Alexandria.

There are no large poultry yards, but the county people raise and market poultry, and have many improved breeds.

Alexandria is admirably situated for manufacturing purposes, being near the mines of coal and iron and on a deep river. The Alexandria and Fredericks-

burg, Virginia Midland, Washington and Ohio, and Washington and Alexandria railroads all centre here, and the Alexandria Canal, connecting with the Chesapeake and Ohio, forms a water line to Cumberland, 187 miles above; transportation is therefore cheap and expeditious. The Washington, Ohio and Western Railroad has seven stations in the county and three lines between Alexandria and the Long bridge.

There are three turnpike roads, and the many public roads are improving. It has a very full supply of the finest and purest water, so pure that the re-agents which blacken ordinary hydrant water elsewhere do not affect its transparency, and its fire department is unexcelled for its efficiency.

Minerals, fine brownstone, soapstone and other building stone are found and quarried. Clay for brick-making is abundant, and four extensive brickyards are now in successful operation, and there is an abundant supply of excellent sand for building purposes, while limestone is brought to the kilns very cheaply.

Taxation for county levy: Public roads, 50 cents on \$100 worth of property and income; county expenses, 48 cents.

LIVE STOCK.

	Number.	Value.
Horses and mules	880	\$43,501
Cattle	645	10,873
Sheep	7	14
Hogs	330	837

Foxes, raccoons musk-rats, hares, etc., are quite numerous. The water fowls and birds of the Potomac are plentiful, as are the common forest and field birds of Northern Virginia.

Church accommodations are also abundant. There are five Methodist churches, three Episcopal, three Presbyterian, one Catholic, one Baptist, and one Lutheran, a Friends' meeting-house and Jewish synagogue for white people, and seven Baptist, one Methodist and one Episcopal for colored—in all twenty-four places of worship, one for every six hundred people. The place is quiet and orderly, and its morality is decidedly above the average.

The Alexandria *Gazette* and the *News* are published daily in the city of Alexandria; also the *National Farm and Home*, the organ of the State Grange.

School facilities are excellent. Besides the public schools, which employ thirty-nine teachers and educated last year more than 2,000 children in eight grades, there are more private schools for the population than in almost any city in the Union. I may name St. John's Academy, a military school, which had one year patronage from fourteen States and Territories; Potomac Academy, another flourishing institution for young men; St. Mary's Academy, Arlington Institute, Mount Vernon Institute, the Alexandria Female Seminary, and other excellent schools of high grade for young ladies, besides Catholic and Lutheran parish schools, and many private schools for children of both sexes.

The public schools in the city are: White, 20; colored, 15; total, 35. In the county: White, 4; colored, 5; total, 9.

County and school district tax: Jefferson district, 20 cents; Arlington, 25 cents; and Washington, 45 cents on the \$100 worth of property and income.

Its nearness to Washington also adds to its advantages. There is communication by rail or boat every half hour during the day, and several trains up to

midnight, at a cost almost nominal, so that the amusements and instructive collections of that beautiful city are always within easy reach.

WATER-POWER.

The great waterfalls above Washington city give to this county immense water-power which could be cheaply utilized.

Monthly average temperature for one year ending 30th November, 1892, 54.8°. Total precipitation for same period: Annual, 42.31 inches; average monthly, 3.53 inches.

Its health is excellent; it has not suffered from any pestilence since the beginning of the century, even the cholera touching it very lightly in 1832, and passing it by in all its other visitations. One of the schools, with fifty students boarding in it, has had but two deaths, a teacher and a pupil, in more than half a century, and advertised one year that its physician's bills averaged but twenty-five cents to each student, at full rates. •

ALLEGHANY

Was formed in 1822 from Bath, Botetourt and Monroe. It is twenty-six miles long and has a mean breadth of twenty miles, with an area of 431,787 acres.

Population: White, 6,955; colored, 2,328—total, 9,283; males, 4,879; females, 4,404.

The county is watered by Jackson and Cowpasture rivers, which unite near the eastern border and form the James. Water-power is immense, and sites for its use are convenient.

The surface is very much broken and mountainous, but there are some considerable areas of valley lands of the finest limestone soil, producing excellent crops of tobacco, grain, fruit and grass. The main business of the farmers is grazing and rearing cattle, horses, sheep and swine.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,164	\$69,750
Cattle	3,476	46,793
Sheep	2,496	5,257
Hogs	1,932	4,079

This is a healthy region, and the summer climate is delightful. The mountain lands are cheap, and no doubt capable of being utilized to a much greater extent than now in the stock-raising business.

The mountains are clothed with immense forests of valuable timber—oaks, hickory, pine, poplar, ash and chestnut. Oak, pine and poplar are converted into lumber by seven saw-mills.

The mountains are filled with iron ores of great purity and value. These ores have been largely developed and worked in the various furnaces in the county, of which Clifton Forge, Low Moor and Longdale are the principal. Pig iron is turned out by these furnaces in great amounts and at low cost.

Granite and cement limestone have also been developed, and hydraulic cement is also made.

There are large coking ovens at Low Moor.

Iron Gate is a new town, with valuable iron-works and other industries.

The Chesapeake and Ohio Railway traverses this county centrally, passing through Covington, the county-seat. The Richmond and Alleghany Railroad connects at Clifton Forge with the Chesapeake and Ohio Railway, and with its easy grades affords much relief to the heavy hauling of the great amount of metal from this region.

Covington, the county-seat, is a place of commercial importance, very favorably situated for trade. Low Moor, eight miles lower down on the Chesapeake and Ohio Railway, is rapidly growing into a manufacturing town, the great iron works here being the nucleus. Clifton Forge, at the junction of the Chesapeake and Ohio and Richmond and Alleghany, is fast becoming an important town.

County taxation: County levy, proper, 35 cents on \$100 worth of property; public roads, 15 cents on \$100 worth of property; public schools, 10 cents on \$100 worth of property; district schools, 10 cents on \$100 worth of property; bridge tax, 5 cents on \$100 worth of property; total county tax, 75 cents on \$100 worth of property.

Number of public schools: White, 40; colored, 7; total, 47.

Two papers are published at Clifton Forge, the Clifton Forge and Iron Gate Record and the Alleghany Sentinel.

Churches of several denominations are conveniently located.

Wild animals: Bear, deer, catamount, ground-hog, raccoon, opossum, squirrel, hare, mink, skunk, musk-rat and otter.

Wild fowl: Turkeys, pheasants and ducks.

Birds: Partridges, larks, woodpeckers, hawks, robins, snow-birds, whippoorwills, crows, black birds, red birds, blue birds, swallows, killdees, doves, and owls.

Average annual temperature for 1892, about 54 degrees; rainfall, 38 inches.

AMELIA

Was formed in 1734 from Prince George. It lies on the south bank of the Appomattox River, which separates it from Chesterfield, Powhatan and Cumberland counties, and, together with its numerous tributaries, affords ample drainage and extensive bottom lands. The county is thirty miles long and about ten miles in mean breadth, and contains 222,788 acres of land. Population, 9,068—white, 8,028; colored, 6,045; males, 4,547; females, 4,521.

The upland is generally undulating; the soil varies from red clay to gray slate and sandy loam, and produces good crops of tobacco, corn, wheat, oats, rye, grass, etc. Tobacco is the main money crop, and its production and curing are carried to great perfection by intelligent and careful planters.

The following is a reliable report of the largest production of the following crops: Wheat, 58 bushels per acre; corn, 200; Irish potatoes, 300; sweet potatoes, 200; tobacco, 2,053 pounds; hay, 8 tons per acre.

"Flue-curing" has been practiced here for ten years past, and it has been found that bright tobacco of the finest quality can be produced in Amelia.

To settle the question of profit in the production of tobacco, I make the following extract from a letter from a large tobacco planter in this county to a fertilizer manufacturer in the city of Richmond, under date of September 26, 1892:

"I planted seventeen acres in tobacco on my farm in this county in the year 1892, on which I used about six and one-half tons of your fertilizer. I raised

from this seventeen acres, and sold in the Richmond market, about 25,750 pounds of tobacco for \$3,006.42, less freight and commission. I will say, however, that at least five acres of this land was of a very ordinary character; that had not heretofore been used for tobacco, and I do not think the five acres would average over 900 pounds to the acre; but on the seventeen acres, without any other application of fertilizer whatever, I harvested, threshed and measured 573 bushels of wheat, and being machine measure and heaped up, it will probably overrun at least six bushels to the hundred. On a part of my best land I think the yield was upwards of forty bushels of wheat to the acre. On the entire seventeen acres the average is about thirty-three and one-half bushels, machine measure.

"In the year 1890 I raised on about seventeen and one-half acres upwards of 27,000 pounds of tobacco, and sold it for \$2,400. I would add that I used nothing but your fertilizer on this crop also.

"I now have growing twenty acres of tobacco on which I have used your fertilizer, and it now bids fair to be a splendid crop; but, of course, the dry weather has affected it some. I think, however, that although it may not have as large a leaf, that the body may be heavier and more waxy than last year."

Few counties or States can show a better record than the above, yet land can be bought for very little money in Amelia, and a large area is uncultivated for want of population.

All fruits grow well, and are prolific under proper care. Vegetables of all kinds come to great perfection. Grapes have been cultivated to some extent, yielding as high as \$150 per acre. Gen. George J. Hundley, near Amelia Courthouse, has gone into the grape culture with success. He finds a ready market in New York at remunerative prices.

The plum, whortleberry, dewberry, grape and blackberry form a delightful and healthy summer diet, and are used for canning purposes.

The blackberry is susceptible of great improvement by cultivation.

Improved agricultural machinery is being introduced by enterprising farmers, and this bids fair to become again what it once was—one of the richest counties in the State in proportion to population.

LIVE STOCK.

	Number.	Value.
Horses and Mules	1,380	\$66,504
Cattle	3,247	30,836
Sheep	1,465	2,963
Hogs	2,027	4,591

The county is well supplied with wood of all kinds—lumber pine, old-field pine, white oak, Spanish oak, hickory, maple, birch, poplar, dogwood, locust and persimmon. The lumber trade has been a source of considerable revenue since the war. Contractors from all parts of the country come to buy cross-ties, spokes and staves. The bark trade has been large. The wild sumac has developed a new industry, and immense quantities are gathered and shipped, yielding a support for many persons, especially the young and decrepid, who could not earn a living by a more laborious service. There are twelve saw-mills.

The winters are mild and of short duration; may be two or three cold spells, which gives the ice crop. The summers are pleasant for the most part, and there

are no storms of unusual violence—no cyclones. Monthly average temperature, 58 degrees; rainfall, 41 inches for 1892.

The minerals of Amelia are various. Mica is very abundant, and mines have been successfully and profitably worked for some years past. In the vicinity of the county-seat are the Rutherford, Jefferson and Pinchback mines. Others exist in the same locality, not yet in operation to any extent. Kaolin is obtained in great quantities in connection with the mica. A mine of steatite or soapstone is being successfully operated a few miles from the county-seat. A soft yellow stone exists, which has been used for making a cheap paint. Coal exists in the eastern part of the county, but has not up to the present been mined. Some gold has also been found in the eastern section of the county. Mica and steatite are now worked. Mineral springs of decided value, both sulphur and lithia, exist. The Mohican well, on the place of Judge F. R. Farrar, has considerable local reputation. The waters have never been analyzed, but the neighborhood people use it with beneficial results.

Wild animals: Deer, foxes, beaver, otter, mink, hare and squirrels.

Wild fowl: Wild turkey, pheasant, partridges, woodcock and snipe.

Birds: English sparrow, mocking-bird, sparrows, swallows, martins, robins, thrush, red bird, woodpecker and other songsters.

The public schools of Amelia, growing in efficiency, compare most favorably with like schools in the State, and afford very fair facilities for a primary and business education. Number of public schools: White, 21; colored, 19; total, 40.

There are about forty churches, occupied by five denominations.

The colored race predominates in Amelia county, yielding a class of laborers for farming and other purposes cheaper and more constant than any to be found in the United States.

Amelia Courthouse is immediately on the line of the Richmond and Danville Railroad, and is just thirty-six miles from Richmond. This is a growing village, with seven stores, a steam flouring mill, and other necessary branches of industry. Jetersville, another village on the Richmond and Danville Railroad, forty-three miles from Richmond, has four stores and other branches of business, and is a thriving place. These are the largest of the villages of the county.

More attention is being paid to the roads and bridges of the county than heretofore, and several iron bridges have been constructed.

Tax for county purposes is sixty cents on \$100 valuation of real and personal property.

The Richmond and Danville Railroad passes through the centre of the county, and the Norfolk and Western near its southeastern border. The Appomattox River, on the northern edge, is again open for navigation, giving access to the markets of Petersburg. The Brighthope Railroad strikes the county, and it is contemplated to extend this road to Blackstone, a thriving town in the county of Nottoway.

AMHERST

Was formed in 1761 from Albemarle. It lies on the north bank of James River, which forms the boundary of two of its sides a distance of over fifty miles.

This rich and beautiful county is twenty-two miles long and has a mean width of nineteen miles, and contains 300,013 acres.

Population, 17,551—white, 9,923; colored, 7,628; males, 8,533; females, 9,016.

James River is the southeastern and southwestern boundary of this county. The alluvial lands of this river, with those on the Pedlar and Buffalo rivers, which intersect the county, are very fertile, adapted to the growth of all the grains, grasses and fruits, while tobaccos of the heaviest grade and finest texture are abundantly grown. The red lands of the county along the valleys and spurs of the Blue Ridge and Tobacco Row mountains are among the finest in the State, and in addition to the usual crops, are finely suited to grapes and fruits. The celebrated Albemarle pippin succeeds admirably here, while the sides of these mountains present the finest opening for successful vine culture. One of the largest apple orchards in the State is in this county, almost wholly of winesap apples.

The wild animals are foxes, raccoons, ground-hogs, opossums, squirrels, hares, minks, etc., with some bears, wildcats, and deer in the mountains. There are wild turkeys, pheasants, partridges, woodcock, and all the forest and small field birds. It also has hawks, owls and crows.

The cattle trade of the county is considerable; many cattle are bought in the counties south and grazed upon the fine grass lands of the mountains.

LIVE STOCK.

	Number	Value.
Horses and mules	2,657	\$112,855
Cattle	5,287	59,493
Sheep	657	1,418
Hogs	3,000	6,631

Bee culture has enlisted attention, and those who have embarked in it have found it profitable. There is one large apiary near Amherst Courthouse which markets a large quantity of honey.

The timber consists of oak, hickory, walnut, pine, chestnut, maple, dogwood, poplar, cherry, locust, mulberry, etc. There are a few saw-mills in the county, and a number of wood industries. The best timber is converted into lumber.

The lands are cheap, and those contemplating purchasing will find an inviting field.

The minerals found here are varied and immensely valuable. Great deposits of magnetic and specular iron ores are found here suited for the manufacture of steel by the Bessemer process, and of a purity not excelled by any ores south of Lake Superior. The brown hematite iron ores are also in great abundance, and are cheaply mined, and scarcely less valuable than the specular and magnetic. These ores are found in contact with or in the vicinity of limestone. There are many mines of these ores worked in the county. Copper, slate, pyrite, plumbago, ochre, allanite, sepitite, apatite, steatite and manganese are found in this county. Iron and copper have been mined, and iron is now mined.

In minerals the rich hematite, magnetic and specular iron ores of the Central Virginia Iron Company, the Dover Coal and Iron Company and numerous individual land owners offer fields for profitable investment. Iron ore of best quality is now being supplied from the lands of the Central Virginia Iron Company. The iron and steel from these ores is of superior quality; some of these veins analyzed as high as 66 per cent. iron. The county is also penetrated by numerous veins of copper ore which have once been worked; also marble and plumbago.

The Richmond and Alleghany, Virginia Midland and Norfolk and Western railways offer facilities to market in Lynchburg, Richmond, Alexandria, Danville, Washington and the great cities North.

Monthly average temperature about 56°. Rainfall, 1892, 40 inches.

Its main market is Lynchburg, with which it is connected by a free bridge. Amherst Courthouse is a pleasant little town on the Virginia Midland Railroad, which runs through the county. It has one weekly newspaper (the *New Era*) and six churches.

The number of public schools are: White, 58; colored, 30; total, 86.

The Richmond and Alleghany Railroad runs along its southern border for some distance, and the Norfolk and Western runs on its border below Lynchburg for about six miles. The county is susceptible of great development.

In 1886 a correspondent for the Hand-Book wrote: "We are awaking from a Rip Van Winkle sleep on the subject of roads, and if we push the present system will soon compare favorably with our neighboring counties in good public roads. Good wagon roads will develop the magnificent resources of this county and be more likely, in the writer's opinion, to invite immigration and capital than railroads."

Taxation for county purposes: 45 cents on the \$100 value of real and personal property.

APPOMATTOX

Was formed in 1845 from Buckingham, Prince Edward, Charlotte and Campbell counties. It is about twenty-six miles long and eighteen miles wide, and contains 203,679 acres of land. Population: White, 5,254; colored, 7,336; males, 4,863; females, 7,926; total, 9,589. It lies on the south bank of James River, and is well watered by tributaries of that river, by the Appomattox, and some of the tributaries of Staunton River.

The surface is rolling, and in some parts hilly, but the many streams give a large proportion of bottom land. The soil varies from a stiff red clay to gray slate of a light and friable texture.

The productions are tobacco, grain and grass. Tobacco is as yet mainly relied on as the money crop, and as the soil is peculiarly suited to the production of fine "shipping," the county is noted for the high grade of this class of tobacco.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,572	\$78,430
Cattle	3,574	33,984
Sheep	968	1,936
Hogs	2,552	4,995

The timber is abundant and of valuable kinds, as oak, hickory, walnut, chestnut, maple, poplar, dogwood, etc.

There are five saw-mills in the county and nine grain-mills.

The minerals of Appomattox are varied and valuable, to-wit: Gold, iron, copper, manganese, steatite, mica, plumbago, asbestos, etc. Iron, copper, asbestos and soapstone have been developed. Only pipe-clay is now worked. There is a large pipe manufactory at Pamplin City, which does a large business.

Number of public schools: White, 29; colored, 17; total, 46.

There are about thirty churches, well located, and occupied by four or five denominations.

The means of transportation to market are very good, and are afforded by the Norfolk and Western Railroad passing through near the centre, and by the Richmond and Alleghany Railroad, which skirts its northwestern border.

The United States Government has a national cemetery on the field where the surrender of the Confederacy took place.

There is one newspaper in the county.

This is a healthy and pleasant climate, where cheap and productive lands and agreeable surroundings furnish good inducements for new settlers.

Wild animals: Deer, foxes, raccoons, opossums, hares and squirrels. Wild fowl: Wild turkeys, pheasants, ducks, and partridges. Birds: Larks, doves, robins, thrushes, woodpeckers, hawks, crows, owls, killdees, mocking-birds, red birds and other songsters.

Monthly average temperature, 56°; rainfall for 1892 about 40 inches.

AUGUSTA

Is chief among the counties of the famous Valley of Virginia, second in size, containing more than 1,000 square miles—627,015 acres. Population, 37,005—males, 17,741; females, 19,268; white, 28,596; colored, 8,409.

The surface is uneven and mountainous on its east and west boundaries, which are respectively the Blue Ridge and Great North mountains, an out-lying range of the Appalachian chain. The valleys between these mountains are extensive and very fertile, embracing the head waters of the Shenandoah River and that part of the Valley of Virginia at its greatest width. It is about thirty-five miles long and thirty wide, with an undulating surface, abounding in hills, fertile and well-watered valleys, with fine water-power. Augusta has over twenty grain mills, besides other works utilizing its water-power.

Augusta has a variety of soils, producing wheat, corn, oats, rye, barley, buck-wheat, potatoes, turnips, beets, etc.; also the various grasses for hay and pasture. This county is noted for its fine horses, fine cattle, hogs and sheep, the latter having greatly increased and improved since the enactment of a "dog law" for their protection. This county is notable also for the number and excellence of its flouring mills, propelled by the finest water-power. The census of 1880 shows that in the production of wheat, hay and clover-seed, Augusta stood at the head of the list of Virginia counties; the only county that stood first for more than two crops. It also stood first in the number of horses.

LIVE STOCK.

	Number.	Value.
Horses and mules	10,846	\$606,095
Cattle	20,219	274,825
Sheep	12,747	45,912
Hogs	13,741	31,647

Augusta produces large quantities of milk and butter, poultry and eggs, although there are no large dairying or poultry farms in the county.

Lumber: Oaks of the several kinds, white oak being very abundant and of superior quality; hickory, chestnut, walnut, poplar, maple, beech, dogwood, white ash, locust, pine (white and yellow), cedar, etc. There are thirty saw-mills in the county and other wood works.

Many minerals are found in this county, such as iron ore (brown hematite and specular), manganese in large quantities (which is mined), marble, kaolin, with a large factory awaiting capital to operate it, and coal of an anthracite character.

The Hand-Book of 1886 says:

"At Dora, where a shaft has been sunk, coal has been taken out not inferior to the best Pennsylvania anthracite, is wagoned eighteen miles, and undersells the Northern coal. There is no doubt North Mountain is full of it."

The Crimora manganese mine, near Waynesboro, is unrivaled in quantity and quality. For years Andrew Carnegie got manganese for his great Pennsylvania steel works from this mine.

Through the county stretches a band of magnesian limestone, and it is found near Weyer's Cave, west of Waynesboro, northwest of Staunton, near the base of Little North Mountain, and numerous other places. Its hydraulic character has been well tested. This cement has recently been found on the farm of John L. Peyton, and is pronounced by competent judges a first-class article. This limestone, from which hydraulic cement is made by burning, constitutes an important part of the formation of the Valley, both from its extent and economical value. It is usually of bluish gray, sometimes blended with yellow or brown, and sometimes dark blue, but the best guide to its recognition is the dullness of the surface, even when freshly broken, and the absence of fine grain of most limestones. Those in Augusta contain about from 44 to 53 per cent. of carbonate lime, and 33 to 35 per cent. carbonate magnesia and 2 to 7 of silica. The other constituents are generally alumina and oxide of iron in moderate proportions. A New York marble firm leased the Craigsville marble quarry, in this county (encrinal marble, now in much demand), and have worked it largely; the deposit is believed to be inexhaustible. The marble is represented as being very superior, finishing up in beautiful style, being more durable and smoother than the Tennessee marble, and equal to much of the Italian marble, which is used on the finest furniture. A quarry of superior slate has been opened north of Staunton. These slate quarries are largely worked now, and are turning out mantels, hearths, wainscoting, steps, etc.

There are many mineral springs of excellent water of their kinds, among them the Stribling Springs, the Variety, Crawford, the Lone Fountain, Chalybeate, Lithia, etc., consisting of a great variety of waters, much esteemed by the people and much resorted to by strangers.

Weyer's Cave, of considerable celebrity, has been improved and prepared for the entertainment of visitors, and is worthy of the attention of the tourist.

There are six or more iron furnaces, besides a considerable number of forges, which have been operated in this county on the vast deposits of iron ores, and they are making iron cheaper than it can be made North or West.

The various fruits of this section succeed admirably in this county. The winter apples of Augusta have a fine reputation, and nearly every farm has a suitable orchard.

The Chesapeake and Ohio Railroad passes through the county, and is intersected at Staunton by the Valley branch of the Baltimore and Ohio Railroad, connecting it with Baltimore and with Washington; and the macadamized Valley pike, an excellent road, gives ready communication to various markets East, West and North. The Shenandoah Valley Railroad also passes through the county, crossing the Chesapeake and Ohio Railroad at Waynesboro.

Thus the county is traversed by three great lines of railroad, one from east to west and two from north to south.

The capital or county-seat of Augusta is Staunton. Here is the point of intersection of two trunk lines of railroads, viz.: The Chesapeake and Ohio and the Valley branch of the Baltimore and Ohio railroad. Here are the Western Lunatic Asylum and the Asylum for the Deaf, Dumb and Blind; also, five prosperous female colleges, viz.: The Virginia Female Institute (Episcopal); the Wesleyan Female College (Methodist); the Augusta Female Seminary (Presbyterian); the Staunton Female Seminary (Lutheran), and the Valley Female Seminary. Here are also an iron foundry, wagon and implement factories, and numerous shops, banks, and churches of all the leading denominations. An annual agricultural fair is held here. It has a population by the census of 1890 of 6,975. (See "Cities," in another chapter.)

The station of the weather service of the Department of Agriculture at Staunton reports for 1892 monthly average temperature for twelve months to 1st of December, 53.7°; rainfall, average monthly, 3.37 inches; average annual, 40.45.

The farmers have a fine home market in the city of Staunton, with its numerous schools, manufactories, and the State institutions, which alone disburse \$100,000 annually.

County taxation for all county expenses: 25 cents on the \$100 worth of real and personal property.

There are many small towns and villages in the county. Waynesboro, at the junction of the Shenandoah Valley and the Chesapeake and Ohio railroads, is well situated. Basic City, near this point, has a prospect for becoming a manufacturing town of importance. Proximity of valuable minerals and fine railroad facilities make it a point of attraction.

The county is well supplied with churches and schools. Number of public schools: White, 171; colored, 43; total, 214. The following denominations have congregations and church buildings in the county: Methodist, Presbyterian, Lutheran, Baptist, Mennonite, German Baptist, United Brethren, Episcopal, Roman Catholic and Disciples.

A writer has said: "If Augusta county had the same density of population as Rhode Island, it would sustain 272,000 people, and it is well able to do so."

It has the following weekly papers: *Spectator*, *Vindicator*, *Yost's Weekly* and *The Argus*, at Staunton; *Waynesboro Sentinel*, at Waynesboro; and the *Daily Times*, *Basic City Advance* (weekly), *Normal Index* (monthly), *Agents' Record* and *Goodson Gazette*, published at Staunton.

BUCKINGHAM

Was formed in 1761 from Albemarle; is thirty-five miles long and twenty-four miles wide, and contains 351,785 acres of land. Population, 14,388—white, 6,786; colored, 7,587; males, 6,989; females, 7,394.

It lies on the south bank of James River, which forms its boundary on two sides for nearly fifty miles. The broad bottom lands on this river are of unsurpassed fertility. Willis River, Slate River, and many smaller tributaries of the James, water this county, and Appomattox forms part of the south boundary.

The surface is rolling and hilly, with several small mountains, as Willis, Slate River and Spears mountains. The soil varies from stiff red clay to a gray

slaty texture, much of it very rich. The Slate River lands are very fine, and comprise a considerable area, the soil resembling that of the celebrated Green Spring lands of Louisa county.

The productions are tobacco, corn, wheat, oats, rye and grass. There is much fine tobacco produced in this county, and the planters are careful handlers of it. New varieties are being tried, and an effort made to improve the old kinds.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,164	\$96,960
Cattle	6,826	65,190
Sheep	2,205	4,525
Hogs	3,648	6,837
Goats	69	130

Wild animals: Deer, fox, squirrel, hare, mink, beaver, otter, musk-rat, weasel, wild cat and opossum.

Wild fowl: Wild turkey, pheasant, partridge and woodcock.

Birds: Hawks, owls, crows, robins, snipe, black bird, plover, thrush, sparrow, wren, lark and dove.

The timber found here consists of oak, chestnut, pine, hickory, etc., and is abundant.

There are about forty saw-mills in the county, and great quantities of pine, poplar, oak and chestnut lumber are sawed. For many years large quantities of hoops, staves and shingles have been sent from "the barrens" of this county.

In 1886 the following was prepared by an intelligent and well-informed citizen of the county:

"This county is rich in minerals—iron, gold—of which many mines have been successfully worked for a great many years; barytes, slate, asbestos, mica and limestone. Slate of superior quality is mined near New Canton more extensively now than ever before, and is in great demand all over the country. To accommodate the demand for transportation of this slate, there has recently been built the Buckingham Railroad, a branch of the Richmond and Alleghany Railroad from Bremo Bluff station, across the James, on a new and substantial bridge, to the slate quarries. The construction of the railroad and bridge here mentioned, and of several bridges at other points, is due to the enlightened policy of the authorities of the Richmond and Alleghany Railroad, who are doing all in their power to develop the country through which it passes, and all which is tributary to it, the counties lying on the south bank as well as those on the northern. The main line of the road skirts the northern and western boundaries of Buckingham for nearly fifty miles, and affords means of transportation to market for the products of the greater part of the county.

"Veins of gold, slate and iron enter the county just above New Canton, on James River, passing through the county. Slate is the leading vein, from a quarter to a half mile wide, inexhaustible as to quantity and most excellent in its character, and now largely worked.

"The gold vein is from two to fifteen feet wide on the west, and there is iron on the east in the greatest abundance."

The celebrated Overman (practical mineralogy) says:

"We have here (in Virginia, etc.,) a belt of gold of unparalleled extent, immense width, and undoubtedly reaching to the primitive rock."

"Here is a mass of precious metal enclosed in the rock which cannot be exhausted for ages; and in this respect the region in question is the most important of all known deposits, California not excepted."—*The Virginias.*

Number of public schools, 85—white, 50; colored, 35.

County taxes for all purposes—roads, schools, etc.: 65 cents on \$100 value of real and personal property.

Churches of various denominations are numerous.

Monthly average temperature for year ending 30th November, 1892, 57°; rainfall about 40 inches for same period.

BOTETOURT

Was formed in 1770 from Augusta. It is forty-four miles long and about eighteen miles wide, and contains 394,092 acres. Population, 14,759—white, 11,122; colored, 3,732; males, 7,320; females, 7,834.

This is one of the finest counties of the James River Valley, and is noted for its fine grass lands and fat cattle. The surface is rolling, and parts of the county are mountainous. The soil is fertile, being formed in large part from the disintegration of limestone rocks.

Live stock is very fine and grazing profitable.

	Number.	Value.
Horses and mules	3,497	\$160,355
Cattle	6,937	70,166
Sheep	2,628	5,302
Hogs	3,612	6,518

The productions are tobacco, wheat, corn, oats, cattle and fruits, forming a large aggregate of value. Extensive areas are devoted to fruit growing, and much fruit annually canned and evaporated.

"Jennings Creek," in this county, has long been noted for the quality of its tobacco, which is almost wholly used by manufacturers of fine chewing tobacco.

Very few counties of the State have such a diversity of agricultural products. A local writer for the Hand-Book of 1886 says:

"From an agricultural standpoint, we produce, in great perfection, wheat, corn, oats, rye, tobacco, Irish and sweet potatoes, all of the valuable grasses, peaches, grapes and apples. All small fruits succeed admirably. Within a compass of four miles from where I now write there are more than 200,000 bearing peach trees and immense apple orchards, the fruits of which are either canned or evaporated for market. There are seven steam canning establishments within the small compass above referred to, where fruits and vegetables are packed, furnishing employment for over 1,000 hands—men and women—yielding an income yearly to the proprietors of as much as \$130,000."

James River flows through the county, and, with its tributaries, gives abundant water-power.

There are twenty grain mills in the county; some of them flouring mills of high reputation; also, two woollen mills, four or five tanneries, several furnaces and foundries.

It is traversed by the Richmond and Alleghany Railroad, following the banks of the James a distance of forty miles, from east to west, and by the Shenandoah Valley Railroad from northeast to southwest; and the Norfolk and Western Railroad crosses the southeast corner. These roads give convenient access to market from all parts of the county, and have been the means of developing

some of the finest iron ore deposits in the State, immense in extent, indeed practically inexhaustible.

Public roads are fairly good; several of them are macadamized turnpikes.

Newspapers: *Herald* (weekly), *Fincastle*, and *Virginia Manufacturer*, at Buchanan.

The brown hematite (limonite) iron ores have not only a remarkable development in Botetourt county, but they are so disposed in thick, continuous beds, and extended outcrops, that they can be cheaply mined on a large scale. These ores are found in nearly all the mountains of the county. Specular ore has been discovered near Buchanan, one vein fifteen feet thick and analyzing 65 per cent. pure metal. In summing up an account of his exploration of the ores belonging to the Arcadia Iron Mining Company, in this county, Prof. J. L. Campbell gives the following as his opinion of the *quality, quantity and accessibility* of these ores: As to *quality*, the chemical analyses and furnace-tests speak most favorably. As to *quantity*, . . . ten generations cannot exhaust the supply. As to *accessibility*, the beds are very favorably situated for mining, either by open cuts or tunnels. The numerous ravines that cut across the strata give natural openings at which to begin mining operations, and as these ravines all descend towards the river, all the ore can be transported by a down-grade to the point of shipment and use.

Five miles below Clifton Forge depot, near the railroad, and in a very accessible situation, is a surface deposit of brown hematite ore, forming a solid mass 300 feet long, 60 feet wide, and 25 feet high. This ore yields by analysis 55 per cent. of superior iron. Limestone in the same region is abundant and of excellent quality.

Major Jed. Hotchkiss, in *The Virginias*, makes the following statement of the ores near Buchanan, which was copied in the Hand-Book of 1886:

"I have never before seen such a development of specular ores in Virginia, and am satisfied that the inducements offered by their abundance and consequent cheapness in the immediate vicinity of four or five other varieties of ores, that are also abundant, and at a moderate distance from the best coking-coals of the great Ohio basin, must go far towards making Botetourt one of the great iron-producing centres of the country. . . . No region can furnish more cheaply than this any or all the varieties of limestone needed for fluxing in blast furnaces; some of these contain 98.30 per cent. of carbonate of lime, others abound in alumina. Marbles of various kinds abound among these lower silurian rocks."

Inexhaustible deposits of coal of the best quality can be furnished on the line of the Shenandoah Valley Railroad at a little above three dollars per ton. This road traverses the entire length of the county from south to north, on the line of which there is pretty much an unbroken chain of immense iron-ore beds, several of which are now being worked on a large scale. On the eastern side of the county the Norfolk and Western Railroad also penetrates inexhaustible iron-ore beds, as also does the Richmond and Alleghany Railroad on the northern side. Near the Stone-Coal Gap there has been discovered and successfully mined a coal believed to be anthracite.

A fine-grained gray marble, solid and massive, is found near Buchanan in a bed fifty yards wide. There has also been found and tested valuable lithographic stone in the same section.

There are five mineral-water resorts in this county, all of which are (in season) crowded with visitors.

The county is well supplied with hickory, oak, poplar, walnut, ash and pine timber. There are eight saw-mills and four or five bark-mills. The following wild animals are found: Bear, wild-cats, deer, foxes, raccoons, opossums, ground-hogs, musk-rats, otters, minks, squirrels and hares. Wild fowl are turkeys, ducks, pheasants, partridges, larks, and many smaller birds are plentiful.

For educational advantages, the county is closely dotted all over with public school-houses; the towns and a few of the country places are supplied with schools of higher grade. Just on the southern border of this county the famous "Hollins Institute" is located, certainly *one* of the best female schools in the State.

Number of public schools: White, 83; colored, 24; total, 107.

A few hours' drive brings us to Roanoke College, at Salem, and at a shorter distance the city of Roanoke. Fincastle and Buchanan are thriving towns, and there are many villages dotting the county. All of the religious denominations are well represented, with good church buildings in towns and country. Stores, mills and workshops in abundance.

Taxation for county purposes has been for several years 80 cents on the \$100 value of property.

Monthly average temperature for the year 1892, ending the 30th of November 56.9°; total annual rainfall, 39.77 inches for the same period.

BATH

Was formed in 1790 from parts of Augusta, Greenbrier and Botetourt, and is now one of the border counties. It has an area of 500,157 acres.

The population of this county is 4,587—white, 3,827; colored, 761; males, 2,293; females, 2,294.

Some of the valleys are exceedingly fertile and beautiful—the soil is formed from disintegrated limestone—producing grain and grass luxuriantly; even in the mountains there is good grazing; so that this is a most excellent stock-raising county, beautifully watered by clear mountain streams, flowing into the Jackson and Cowpasture rivers, which meander through this county and unite some miles below, near the borders of Alleghany and Botetourt.

The land along the rivers and creeks is quite productive, and yields good crops of the various grains and grasses. The upland and mountains afford fine range for stock, particularly sheep. Stock-raising is a growing industry.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,543	\$69,434
Cattle	4,595	58,526
Sheep	6,613	17,267
Hogs	2,055	3,762

In the county all kinds of timber indigenous to the mountains of Virginia, such as oak, pine, hickory, ash, etc., are found. Pine, oak, poplar and walnut are made into lumber by eight saw-mills.

There is much iron ore in this county, and some of it has been worked successfully for many years. A promising vein of coal has lately been found near Bath Alum.

Nature has been prodigal to Bath in respect to mineral springs. The Warm Sulphur, the Hot and the Healing have long been celebrated; the Warm Sulphur for nearly a century. Here is the county-seat, Warm Springs, an attractive village in the rich Warm Springs Valley. In the southeastern part of the county, near the railroad, we have another group, the Bath Alum, Millboro, and Wallawhatoola. To these resorts multitudes of summer visitors are attracted by the health-giving waters, pure air, lovely scenery, fine fishing and shooting, and excellent fare.

The Chesapeake and Ohio Railroad passes through the southeastern part of the county, giving an outlet for the abundant products, and success to the many attractive watering places of the county. A good turnpike runs through from east to west, and the county roads are improving in condition.

The people are independent and prosperous, having a healthful and beautiful pastoral country. Schools and churches conveniently located. Number of public schools: White, 27; colored, 4; total, 31.

County taxation, 55 cents on \$100 value of property.

Wild animals: Deer, black bear, wild-cats, foxes (red and gray), raccoons, otters, minks, musk-rats, hares and squirrels.

Wild fowl: Turkeys, pheasants, ducks and partridges.

Birds: Crow, blackbird, robin, bluebird, sparrow, lark, oriole, woodpecker, wren, swallow, dove and pewit.

Monthly average temperature at Hot Springs station of State weather service for six months ending 30th November, 1892, 59°; for the year, 52°. Rainfall for five months, 10.24 inches; average monthly for the same period 2.05 inches; annual rainfall about 40 inches.

BEDFORD

Was formed in 1753 from Lunenburg. The extreme length from north to south is forty miles, its width about thirty miles. It contains 492,990 acres of land. Population, 81,213—white, 20,064; colored, 11,149; males, 15,393; females, 15,820.

The surface is broken, and the western part mountainous. The Peaks of Otter, in this county, are among the loftiest in the Southern States, and afford a magnificent view of the surrounding country. The county is well watered by springs of the purest water, brooks and creeks. The lands are productive, and when properly farmed produce fine crops of tobacco, cereals and almost every variety of grasses. Blue-grass is indigenous and affords fine grazing for sheep and other stock. Land plaster acts finely upon these lands. In the greater part of the county we find the red-clay lands, in others light gray or slate; on the two last fine bright tobacco is grown to great perfection; notably is this the case in the Goose Creek Valley. Land sells from one to fifty dollars per acre; improved land usually sells from eight to twenty dollars per acre.

By the census of 1880, Bedford leads all the counties in the production of grass-seed.

In Goose Creek Valley there is limestone in abundance; sheep do well, pay 100 per cent.; cattle are at home there; lands are comparatively cheap. New-comers will be kindly received.

LIVE STOCK.

	Number.	Value.
Horses and mules	6,274	\$270,202
Cattle	18,277	127,813
Sheep	4,316	9,462
Hogs	9,027	17,556

On the southern slope of the Blue Ridge Mountain and its numerous spurs grapes grow in great perfection, and a superior quality of wine is made. Fruits do well here, notably apples.

Bedford is one of the finest fruit counties in the State, having taken premiums at different fairs for years.

The county is watered on its northeast boundary by the James and its tributaries, by the Otter River and its headwaters in the central part of the county, and the Staunton and its tributaries on its southwestern border. The Blue Ridge forms its northwestern boundary between Botetourt and Roanoke.

Wild animals: Bear, deer, lynx, fox, squirrel, mink, weasel, beaver, otter, raccoon, opossum and hare.

Wild fowl: Turkey, goose, duck, crane, pheasant and partridge, woodcock and snipe.

Birds: All the field and forest birds and songsters of Virginia, hawks and owls.

The following minerals are found, developed, and many of them utilized: Iron, asbestos, paint-rock, slate, zinc, kaolin, copper, galena, graphite, ochre, limestone and cement. Bedford, at the State Fair last year, received premium for county exhibit, mainly for finest minerals and timbers. Probably the finest locust in the State is here. There are fifty saw-mills, besides other works in wood and bark.

Mr. Glen Walker, an Englishman, bought several years ago a large tract of land in the northeastern part of Bedford county and planted 11,000 grapevines; they are in full bearing. He established a wine cellar and planted 50,000 additional grapevines. The grapes in the lowlands mature earlier than those in the highlands; there is no part of the county unsuitable for grapes.

The county abounds with fine fruits—apples, peaches, pears, plums, cherries. Peaches have been grown in the county measuring from ten to twelve inches in circumference; the flavor is also excellent.

The apples of Bedford have been celebrated for years, taking premiums at the Lynchburg fairs many times. It has probably the largest variety of fine peaches in Piedmont Virginia.

There is one large fruit-canning establishment in the county.

It has the Norfolk and Western Railroad running through its centre, the James River division of the Chesapeake and Ohio Railway on its northeastern border, and the Richmond and Danville running in close proximity to its eastern border.

A great effort is being made, with hopes of success, to construct a railroad from Big Island, on the Chesapeake and Ohio, southward to Danville. Should that be done almost every farm would be within about six miles of a railroad. The roads and turnpikes of the county will compare favorably with those of any county in Piedmont and the Valley.

County levy: Tax for county purposes, 23 cents on \$100 worth of property; county schools, 10 cents; district schools, 10 cents; total, 43 cents.

Bedford City, the county-seat, is situated near the centre of the county; a flourishing town of some 3,000 inhabitants; is noted for its healthfulness; has some eight or nine large tobacco factories, two large tobacco warehouses, one woollen mill, two flouring mills, one spoke factory, and a planing mill and machine shop, besides other industries. The town is supplied with pure water brought by pipes from the Peaks of Otter. There is an Episcopal, Presbyterian, Methodist, Baptist and a Catholic church in the place, besides one or two churches for the colored people. Two newspapers, the *Index* and the *Democrat*, are published here.

The woollen mills at Bedford City are in successful operation. They are furnishing large quantities of cloth to distant purchasers. The purchases for the United States navy are extensive.

Public schools: White, 102; colored, 44; total, 146.

Randolph-Macon Academy, which has a splendid building at this place, and Bellevue High School, in the southern part of the county, are both fine institutions of learning.

Montvale, formerly Bufordville, situated on Norfolk and Western Railroad, is a village with a Presbyterian and Episcopal church, two large hotels for summer boarders, stores, schools, shops of various kinds, depot, etc. The hotels are filled every summer. This village is near the northwestern extremity of Goose Creek Valley, the most productive section of the county. There were shipped from the Montvale depot from January 1, 1886, to 1st September, 1886, 510,550 pounds of tobacco, which, owing to the low prices then prevailing, did not average more than eighteen dollars per hundred.

Bedford is one of the finest tobacco counties in the State. Goose Creek "brights" have a high reputation, and in other sections "dappled wrappers" bring high prices. Tobacco is the "clear-money" crop of this large and prosperous county.

There is no healthier county in the State. All the boarding-houses and hotels in the county are filled during the summer months with people from the Southern States.

This county is susceptible of great development; it has received quite an influx of new settlers from England and elsewhere, and there is room for many more.

BLAND.

Bland county was formed in 1861 from Wythe, Tazewell and Giles. Number of acres of land, 231,683. Population: White, 4,888; colored, 241; total, 5,129; males, 2,535; females, 2,594.

Several mountain ranges traverse the county from northeast to southwest, making beautiful and fertile valleys, with rolling hills between, threaded by streams clear and sparkling.

The waters of the eastern portion of the county flow east and empty into New River, while those in the western portion flow west and empty into the Holston River. Sharon Springs, the head waters of the Holston River, are 2,849 feet above the level of the sea.

Wheat, corn, oats, rye and buckwheat are cultivated to perfection; some tobacco is raised, though not much. Nearly all of the domestic grasses are cultivated. Blue grass, *poa pratensis*, comes of its own accord, being a native of the soil, and is the king of grasses.

Bland is a grazing county, and her capacity for grazing is being increased every year. She is not far behind the foremost counties in the State in the number of fine, fat bullocks sent to the Eastern markets. The sheep industry is profitable, and is increasing every year, and would increase more rapidly if the cultivation of the dog was abandoned. Horses, mules and hogs of good blood are raised for home use, besides a great many for market.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,800	\$55,999
Cattle.	4,799	41,832
Sheep.	8,848	10,656
Hogs	2,347	2,234

Apples, peaches, pears, plums, cherries and grapes do well when properly attended to. Many varieties of grapes grow wild, some of which make a fine quality of wine.

The mountains are covered with a heavy forest of oak, chestnut, hickory, ash, walnut, poplar, cucumber, linn, locust, maple, pine, both hard and soft. There are twenty-one saw mills cutting the oak, pine and poplar into lumber.

Wild animals: Deer, bear, occasional gray wolf, fox, raccoon, opossum, wild-cat, ground-hog, squirrel, mink, weasel, musk-rat and hare.

Wild fowl: Turkeys, pheasants, ducks, partridges, woodcocks.

Birds: Robins, crows, blackbirds, sparrows, raincrows, doves, larks, wood-peckers, thrushes, catbirds, bluebirds, jays, orioles, hawks and owls.

These mountains are filled with chromic, hematite, magnetic, paint and specular iron ores, lead, kaolin, ochre, barytes, copper and slate. Coal is also found and mined. The other minerals have been developed, but not worked.

There are several mineral springs in the county, the most noted of which are Sharon Springs and Kimberling Springs. The former are seven miles west of Bland Courthouse, on the turnpike leading from Wytheville to Jeffersonville. These springs are recommended in scrofulous diseases. At these springs there is a vein of coal eleven feet four inches thick, and said to be of the finest quality.

Kimberling Springs are seven miles north of Bland Courthouse, ensconced right in the bosom of the mountains, with all the charms that belong to nature in her silent and dreamy mood.

The county is well watered with the finest of springs, of both lime and free-stone water, and several large creeks, affording plenty of water and the finest sites for all kinds of machinery, with plenty of sandstone, and blue and gray limestone for building purposes.

There is no outlet for this untold wealth that is mountain-bound and locked up where nature formed it. Several railroad lines have been projected, and there are good hopes of some of them being built in the near future.

Taxes for county purposes are low—45 cents on the \$100 valuation of property.

Seddon is the county-seat, and is located in the Walker's Creek Valley, near the centre of the county, with turnpikes diverging east, west, north and south.

Good churches are found in almost every neighborhood. Number of public schools, 40—white, 38; colored, 2.

The *Southwest*, a weekly, is published at Bland Courthouse.

The people are sober, industrious and thriving, possessed of as much energy as the people of any county in the Commonwealth.

The monthly average temperature for the year ending November 30, 1892, 53°; monthly total rainfall for same period, .42 inches; average monthly, 3.54 inches.

Her people always extend a welcome hand to all who are seeking homes, or permanent investments, to come to her borders and help build up and develop her latent wealth hid in the earth, and set the waters to humming to the music of the spindle and the loom.

BRUNSWICK

Was formed in 1721 from Surry and Isle of Wight. It is nearly square, with about twenty-five miles on a side, and contains 345,976 acres. Population: White, 6,651; colored, 10,584; total, 17,245; males, 8,424; females, 8,821.

The surface of the county is undulating, and the lands are uncommonly well watered, having the Nottoway River on its north border, separating it from Dinwiddie and Nottoway counties, and the Meherrin and tributaries through the central parts, and tributaries of the Roanoke in the southern sections. The soil is for the most part a sandy loam, easily worked, and very productive in wheat, corn, cotton, peanuts and tobacco. Gypsum is said to act well on these lands, and they are very responsive to commercial fertilizers. This county ranks third in the production of cotton—2,950 bales in 1880. The lands in this county are for sale at lower rates for their real productive value and improvements than in any other part of the State. The climate is mild and healthy.

No minerals have been yet discovered, but there is wealth in the fine timber. Oak, pine and poplar are being converted into lumber by twelve saw-mills, and there is fine hickory, gum, maple and birch in many parts of the county.

Many fine thoroughbred horses were formerly raised in Brunswick, this county being within the "race-horse" region.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,169	\$119,840
Cattle	8,101	58,895
Sheep	8,587	6,875
Hogs	4,436	7,140

Wild animals: Deer, beaver, otter, fox, raccoon, opossum, mink, musk-rat, squirrel and hare.

Wild fowl: Turkeys, pheasants, ducks, partridges and woodcocks.

Birds: Hawks, owls, crows, doves, larks, robins, woodpeckers, etc.

Taxation for all county purposes is 80 cents on the \$100 value of real and personal property.

The line of the Atlantic and Danville Railroad runs through the heart of Brunswick, and passes by Lawrenceville, the county-seat, giving quick and easy transportation to market.

The *Gazette* (weekly) is published at Lawrenceville.

Number of public schools, 80—white, 43; colored, 37.

There are about forty churches, occupied by four or five denominations.

Monthly average temperature for the year ending November 30, 1892, about 57 degrees; total annual rainfall for the same period, 48 inches.

BUCHANAN

Was formed in 1858 from Russell and Tazewell. It contains 639,262 acres. Population: White, 5,843; colored, 24; total, 5,867; males, 3,067; females, 2,800. It lies on the western slope of the Alleghany Mountains, and has two of its sides the dividing lines separating Virginia from West Virginia and Kentucky. Much of the surface is rugged and mountainous, and less is known by the public of this county and its resources than of any county in the State. Repeated inquiries for statistics in regard to this county have heretofore failed to secure any information.

The soil is fertile and well adapted to grass, and its great elevation gives it a moist, cool climate, well suited to grazing and cattle-raising. The valleys especially are fertile and produce excellent crops of all the cereals.

The cattle business could be cheaply prosecuted on a large scale if the requisite capital was invested in this fine grazing country.

LIVE STOCK.

	Number.	Value.
Horses and mules.	1,266	\$53,163
Cattle	5,244	38,464
Sheep.	3,937	3,937
Hogs.	4,791	3,871

The lands are very low-priced, and are held in immense tracts by speculators and persons interested in mining. Minerals exist in vast quantities, and consist mainly in iron ores, coal and salt.

All the wild animals, wild fowls and birds belonging to the mountainous regions are found here; in fact, all that do not belong strictly to Tidewater are plentiful.

This region, for which nature has done so much, is now attracting attention. The wonderful minerals and the conjunction of valuable ores in the Appalachian division of Virginia, together with its wealth of magnificent timber, is resulting in mining and railroad development in spite of the carelessness of its population.

Number of public schools: White, 80; colored, —. School population: White, 2,511; colored, 15.

The annual temperature is about the same as Big Stone Gap, which this year is 51°; rainfall, 55 inches.

CARROLL

Was formed in 1842 from Grayson. It contains 350,090 acres. Population 15,497—white, 15,135; colored, 362; males, 7,807; females, 7,693.

This is the central one of the three counties of that elevated plateau formed by the bifurcation of the Blue Ridge range of mountains—Floyd and Grayson being the other two. The surface is much broken and mountainous, but there are many fertile valleys and rich plains, and the hill lands and mountain sides afford grass and pasture of the best description. The soil varies greatly in color and texture, but is generally fertile.

The productions are tobacco, wheat, corn, oats, grass and fruits. Fruits are produced in great perfection here, especially the apple and grape.

Carroll is the rye county of the State, standing first by the census of 1880 in the list of counties for the production of rye and second for buckwheat.

LIVE STOCK.

Live stock good and profitable.

	Number.	Value.
Horses and mules	2,182	\$81,389
Cattle	10,658	87,700
Sheep	8,790	8,820
Hogs	6,287	6,508

Wild animals: A few deer and bears, wild-cats, foxes, raccoons, opossums, squirrels, ground-hogs and hares.

Wild fowl: Turkeys, pheasants and partridges.

Birds: Hawks, owls, crows, ravens, doves, larks, robins, woodpeckers, sparrows and catbirds.

A large portion of the county is still in timber of the original forest growth, consisting mostly of oak and other hard-wood trees. There are some very good bodies of white pine in the northwestern section of the county; also ash, cherry, walnut and poplar; pine, poplar and oak are sawed, but ash and walnut are not utilized. There are over forty saw-mills in the county.

This region is very rich in minerals, consisting of iron ores, copper, lead, zinc, steatite, mica, etc. Copper and iron have been developed and iron is being mined.

New River and many of its large tributaries flow through the county, and furnish much valuable water-power.

Carroll is without railroad facilities except in the northwest borders, near which runs the Cripple Creek branch of the Norfolk and Western Railroad into the southern part of Wythe.

Number of public schools, 91—white, 88; colored, 3.

Churches of the various denominations are scattered over the county.

County taxation for all purposes is sixty cents on the \$100 worth of property.

CHESTERFIELD

Was formed from Henrico in 1748. It is 28 miles long and 18 miles wide, and contains 293,074 acres. Population: White, 15,399; colored, 10,812; total, 26,211; male, 12,977; female, 13,234. The surface is rolling. The soil is in general light and gray in color, easily improved.

Chesterfield county lies between the James River on the north and the Appomattox on the south. It is intersected by a number of large streams. The county is divided into two unequal parts by the seam of granite which marks the limit of tide-water in all of the rivers of the State.

The eastern and smaller section is, therefore, in Tidewater Virginia, and is adapted to all the crops of that section. The southern section, in addition to the cereals, vegetables, peanuts, etc., of the Tidewater section, produces a good quality of tobacco.

The lands along the James and Appomattox rivers, both above and below tide-water, are good, some of it being unsurpassed by any in the State. The historic farms of Drewry's Bluff, Presque Isle and Bermuda Hundred, with many others just as productive, are on the James River, below Richmond, and are certainly equal to any lands in Eastern Virginia. There are some fine farming lands on the large creeks. The highlands in many cases, though naturally good, have been worn down, and need improvement.

Chesterfield, in the Exposition of 1889, got the first premium for county agricultural products and the second for timber wood and minerals.

The farming interest of this county is rapidly undergoing a change through the energy and perseverance of Northern and Western settlers, who, finding that they could not compete with the West in the cultivation of grain crops, have been seeding their meadow lands to grass, raising butter and milk for the three adjacent cities—Richmond and Manchester on the north and Petersburg on the south. Also, they are now planting vineyards, strawberries and small fruits generally.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,459	\$143,130
Cattle	4,478	57,738
Sheep	2,379	5,280
Hogs	2,535	6,615

The county, lying as it does between Richmond and Petersburg, offers extraordinary inducements to the market gardener, to say nothing of the advantages of being in easy reach of the Northern markets by steamers on James River, at many of the wharves of which vessels can be freighted for foreign ports.

Dairying is now in its infancy, but the ease with which grass can be grown on much of our river land and the proximity of two large cities will at no distant day make it an important industry. All the little industries fostered by the proximity of large cities have a place among its industries.

There is a large blooded-horse stock-farm near Manchester.

As to game, the county has all common to this section—deer, fox, rabbit, squirrel, raccoon, opossum, etc., with wild turkeys, partridges, and along the rivers ducks, geese, sora, etc. Our streams are well supplied with fish—all native to this section abound, and in tide-water streams sturgeon, shad, herring and terrapin in great abundance.

The facilities afforded by the railroads, navigable rivers, etc., for shipping, has built up a very large industry in the cutting of wood and lumber for the Northern market. All kinds of timber can be utilized—gum, oak, pine, cedar, dogwood and poplar. Even the cutting of hoop-poles, tobacco-box linings, etc., gives employment to many.

There are between twenty-five and thirty saw-mills in the county.

The Richmond coal-field, sometimes called the Chesterfield coal-field, runs across the county from north to south. Only the eastern crop has been worked within the limits of this county. At Midlothian the workings are in the hands of companies, independent of the railroad. At Clover Hill the Brighthope Railway Company is working two large pits.

Manchester, opposite Richmond, is a largely manufacturing city, with a population by census of 1890 of 9,246. (See for description, chapter on "Cities.")

Taxes for all county purposes amount to 70 cents on \$100 worth of all real and personal estate.

Ochre is being successfully worked on the lower Appomattox, and gives employment to about one hundred hands.

On the seam of granite above mentioned there are one small and two large quarries, the output of which is said to be equal to any in the country. There is room for unlimited enterprise in this direction.

The remains of an ancient iron furnace are found in this county, five or six miles below Richmond, described by Berkeley in his History of Virginia as being worked in 1620. It was broken up by the massacre of Opeccanough in 1622.

In 1888 a correspondent said of Chesterfield that "it is one of the best located counties in Virginia as regards markets and transportation, lying as it does between Richmond and Petersburg, having two large navigable rivers on its borders and being intersected with railroads." He goes on to say: "For outside markets we are only five hours from Washington, six hours from Baltimore, nine hours from Philadelphia and twelve hours from New York—the great markets of the country. For transportation, we have the James River on the north and east, the Appomattox River on the south and west; the Atlantic Coast Line intersecting the county north and south; the Richmond and Danville Railroad running through the northern, and the Brighthope Railway through the central part of the county, making all parts easy of access and convenient to either railroad or water transportation.

Chester, on the Richmond and Petersburg Railroad, and Bon Air, on the Richmond and Danville, are summer resorts for a class of people in the cities who wish to get their families to the country, but cannot leave their business.

"Our county roads are fairly good, and are being rapidly improved. The Buckingham turnpike in the western part of the county, and the Richmond and Petersburg turnpike, running across the county, no longer charge tolls, but are still good roads."

Number of public schools, 77—white, 49; colored, 28. The Normal and Collegiate Institute for colored students is located in Chesterfield near Petersburg. (See chapter on "Education.")

Average monthly temperature for 1892, 58.4°; rainfall, 40.30 inches.

CRAIG

Was formed in 1850 from Botetourt, Roanoke, Giles and Monroe (now a county of West Virginia), and, like all this section of the State, is rugged and mountainous. Area, 238,781 acres. Population: White, 3,686; colored, 149; males, 1,926; females, 1,909; total, 3,835.

The soil is fertile, and peculiarly adapted to the growth of rich grasses. Accordingly we find here a pastoral life among the people, and much fine stock.

The staple agricultural productions, such as wheat, corn, oats and grass are all grown successfully in all sections.

The rearing of live stock has been a leading industry in the county for a number of years, and a large number of fine horses, fat cattle and sheep are annually shipped to the Eastern markets. Many of the cattle are high-grade short-horns.

The valley of Sinking Creek, twenty miles long and four miles wide, is a limestone formation covered with a rich blue-grass sward, lying mostly in this county, and is admirably adapted to stock-raising. In this valley is the largest flock of Shropshiredown sheep in the State, owned by T. B. Nielson, Esq.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,642	\$62,284
Cattle	3,564	29,358
Sheep	4,124	5,131
Hogs	1,694	2,491

Many farmers are paying considerable attention to poultry, especially turkeys, and, as 1,200 of these were shipped in one day just before Thanksgiving, it would certainly be safe to say that from two to three thousand have been shipped within the past season.

All the fruits and vegetables common to this latitude are grown with the most gratifying results.

A large proportion of the surface is in original forest of superior timber, as white oak, ash, hickory, maple and other valuable woods. The timber of this section of the State is noted for its hardness and great strength. There are thirteen saw-mills making oak, poplar, pine, chestnut and locust lumber.

The growth of sugar-maple is very large, and produces the finest syrup and sugar. A considerable quantity is sent out of the county, and for many years has been profitable.

The minerals consist mainly of iron, manganese and slate. Indications of silver have been found here. The following report on the minerals of this section was prepared by Mr. W. A. Connell, of Craig City, a geologist and mining engineer, in the summer of 1891, and revised within the last month:

MANGANESE, IRON AND COAL COMPANY.

"This company owns twenty thousand acres of land lying in Craig and Montgomery counties. Their lands extend from Craig City southwest along the slope of Craig Mountain for a distance of twenty-five miles, and along the John's Creek Mountain a distance of about seventeen miles. It is thus parallel with and embraces the outcroppings of all these great ore-bearing formations for a distance of about forty miles.

IRON ORES.

"The development of this property has been confined almost exclusively to Craig's Creek, and other than making a geological survey, I have done nothing thus far on John's Creek, though I am convinced that there is fully as much ore there as on Craig's Creek. Upon this property there are several grades of iron ore, which will be found as follows: Ascending the Craig Mountain from the creek, you cross in the lower foot-hills heavy deposits of fine bog ores (of which I will speak later); in the Oriskany (VII.) you come first upon manganese and then upon brown hematites; in the Clinton (V.) are the red shale and fossil ores (the latter not developed); between III. and IV., deposits of hematite again. The various ores will yield from 40 to 60 per cent. of metallic iron, the average being fully 50 per cent., while they are very low in phosphorus and contain no injurious substances. There is, however, conclusive evidence that the supply of manganese on this property is practically inexhaustible. The quality is excellent."

Prof. S. A. Miller says: "Near the foot of the abrupt part of the mountain a ledge of sandstone strata (probably calcareous sandstone, but I neglected to make a good examination of it), sixty feet or more in thickness, projects above the surrounding *debris*, and contains larger and smaller masses of manganese ore. One mass which I saw in place is probably ten feet in diameter. Following the strike of these rocks, for a distance of five miles or more, masses of manganese ore lie on the surface *debris* and within it. One mass exposed upon the surface is fully fifteen feet in diameter, and of unknown depth. Openings

have been made at places where the larger and smaller pieces occur, and the whole presents the appearance of the iron-ore deposits described in the second paragraph above. There are hundreds of thousands of tons of this manganese ore in the surface *debris*, and, as we know the stratified rocks from which it was derived, we can safely say it is practically inexhaustible.

"I never saw manganese deposits elsewhere that will compare with these in quantity or value, and, so far as I know, none are described in the books of science."

The *Record* says: "The mineral resources of this region were known more than a century ago. Many years since a furnace of the most primitive pattern stood within a mile of this village, and the iron which it produced, from ore picked up from the surface of the ground, can still be recognized as the best in the market.

"From the Oriskany mines, a few miles away, the Tredegar Works of Richmond found the best material for the manufacture of the cannon that thundered in the cause of the South.

"In spite of the depression of the iron trade, ore dug in the immediate vicinity is at this moment being shipped by rail to distant furnaces. A well recently dug in this place had to be abandoned from the fact that in the process of digging a mass of iron ore which seemed bottomless was reached.

"It would be easy to quote from the reports of various experts who have examined the mineral resources of this region, and who assert the presence of abundant quantities not only of iron, but of other valuable metals and minerals."

Wild animals: Bear, deer, wild-cat, raccoon, fox, opossum, squirrel, hare, skunk, mink, weasel and ground-hog.

Wild fowls: Turkey, duck, pheasant, partridge, woodcock, wild pigeon.

Birds: Eagle, hawk, crane, buzzard, crow, raven, sparrow, wren, redbird, thrush, robin, woodpecker, martin, oriole, swallow, bluebird, jay, catbird, rain-crow, lark, whippoorwill and snowbird.

We have a plain, but thrifty and law-abiding population. Our educational advantages are being gradually improved and the importance of making the best provision possible for the education of the young is generally recognized.

Public schools: White, 33; colored, 2; total, 35.

County taxes: $83\frac{1}{3}$ cents on \$100 worth of property for all county, school and road purposes.

Several religious denominations are well represented in the county and have regular services at their churches.

Until within the last year Craig has been cut off from railroads. Now the Craig's Creek branch of the Chesapeake and Ohio to New Castle, the county-seat, has awakened this fine little county, and the prospect of its continuation to the Norfolk and Western on New River, developing the finest lands and richest minerals, gives this county a new value.

A correspondent says: "Craig has all the wild animals from the chipmuck to the black bear, and all the birds from the snowbird to the wild turkey, to be found in the temperate zone."

The following extract from the county paper of January is for the information of hunters:

"The present hunting season has been quite a success to the local Nimrods, no less than fifty-seven deer having fallen to the unerring Winchester within the short distance of six miles from New Castle, and turkeys *ad infinitum*.

"The crafty bruin, though so wild and unapproachable in most localities, has actually passed through the streets of the village, and two large specimens less fortunate than their fellows have yielded up the ghost to the leaden messenger.

"No more beautiful mountain scenery can be easily imagined than the lofty hills that hem in this mecca of the sportsman, and whether toiling the mountains high, or wading the rushing torrents, every hour—yea, every minute—is filled with the keenest enjoyment.

"In few other localities in the Eastern States can the sight of seven beautiful deer be witnessed, as the spoils of three days' hunting; and one Winchester, within the short space of fifteen minutes, has sent three fine bucks into the happy pastures of the great beyond."

CULPEPER.

Culpeper is not wholly a Piedmont county. The lower portion runs down into Middle Virginia; hence its surface is less rugged than that of some of the other Piedmont counties. Its area is 237,635 acres. Of this area 30 per cent. is woodland. Population, 13,233—white, 7,147; colored, 6,086; males, 6,508; females, 6,725.

Culpeper is watered by the Rappahannock and Rapidan rivers and their tributaries, which afford fine sites for mills, etc. The soils are red clay, chocolate and sandy, producing fine crops of corn, wheat, oats and grass. Fruits of all kinds and of good quality succeed.

The county has very fine horses, cattle, sheep and hogs, and considerable attention is given to their improvement. Much thoroughbred improved stock has been introduced into this county since the war. About one-sixth of this county is in original timber; about one-half in a regular rotation of crops. Commercial fertilizers are generally used.

By the census of 1880 Culpeper was given the prominence of having produced the largest quantity of broom-corn of any county in the State.

LIVE STOCK.

	Number.	Value.
Horses and mules.	3,927	\$144,743
Cattle.	10,207	117,078
Sheep.	9,319	20,010
Hogs.	5,091	10,882

There are a number of factories in the county—a chair factory near Culpeper, plow-beam and barrel-stave factory near Stevensburg; also factory for spools and shuttle-blocks; another for same near Cedar Run battle-field.

There are five or six grain-mills and some small establishments for making leather, several steam saw-mills and one bark and sumac-mill. There are mercantile establishments in every neighborhood.

This county was the camping ground of both armies for much of the Civil-War period, and was therefore denuded of much of its wood; but so rapid has been the second growth that the destructive effects of the war are scarcely visible at this time.

Number of public schools, 68—white, 41; colored, 27.

There are between forty and fifty churches in the county, embracing all the prominent denominations.

The county taxation is 25 cents on the \$100 worth of property; for county expenses and county schools, 10 cents on the \$100 worth of property; district schools, 8 cents on the \$100 worth of property.

In *The Virginias* of August, 1882, Major Hotchkiss says: "We would like to have some of the forest-wise people, who are croaking about the destruction of our forests, and predicting that we will have a treeless country in a short time, see how rapidly and beautifully Culpeper and other counties along the Virginia Midland, that were almost deforested during the late war by the great armies that camped and wintered there, are now becoming afforested in half a generation. We noticed a few days ago fuel and fencing being cut where Meade's army burned up every tree in 1863-4."

The large development of the secondary formation of the triassic period is an interesting feature in Culpeper county.

This formation extends in a northeast course from the Rapidan River to the Potomac, and in Culpeper county attains a breadth of ten or fifteen miles. The indifferent soil, known locally as black-jack lands, is within its bounds, but the decomposition of its red and chocolate-colored shales furnishes lands of the best quality, easily improved and well adapted to grain, grass and tobacco. The lands underlaid with blue slates and shales are especially suited for wheat.

Trap-dykes intersect this formation in many places, and furnish with the adjacent indurated sandstones hard and durable building stone.

The formation is diversified by elevations of moderate height, probably formed when the southwest range of mountains was upheaved. Several of these make most desirable locations for raising grapes and other fruits. The small Twin Mountains, near Rapidan Station, are noted for their ruggedness; large columns of sandstone strata having been forced up from below, form an interesting and curious spectacle, giving the geologist an excellent opportunity of studying the nature of the incumbent strata.

Another interesting and most valuable formation traverses this county from near Raccoon Ford, on the Rapidan, towards Kelley's Mill, on the Rappahannock. This is the narrow limestone belt which extends nearly through the State, passing from Culpeper through Orange, by way of Mountain Run and Gordonsville; through Albemarle to James River near Scottsville; and thence to within five or six miles of Lynchburg, the James flowing along or over its measures for nearly forty miles; thence through the counties of Campbell, Pittsylvania, Franklin, etc., having in its entire course the same general characteristics, viz.: a narrow limestone or marble formation, accompanied by iron and manganese ores and other minerals. The limestone, though somewhat mixed with siliceous matters, makes excellent lime for agricultural purposes, and with lands on both sides needing most sadly its application, it is marvellous that so little use is made in Piedmont Virginia of this most beneficent gift of nature.

The eruptive force elevating the Southwest Mountains gave rise to the elevations and broad-rolling plateaus and hills, with rounded outline and long slopes on the west side of the triassic formation, and being underlaid, like the Southwest Mountain lands, with trap, greenstone and epidotic rocks, a red soil is formed, of excellent quality, with a good proportion of lime and potash, and capable of the highest improvement. There is a large extent of these lands in Culpeper; they abound in picturesque views and situations, and being entirely healthy and free from malaria, furnish most desirable locations for delightful homes.

The minerals of this county are gold (heavy quartz), copper, iron ore, mica, marble and soapstone. A number of gold-mines have been developed and some have been worked. The gold-mines of this county have been favorably reported on by distinguished mineralogists and mineral experts. There is one marble quarry, and manganese is found along the limestone formation.

Wild animals: Deer, foxes, hares, raccoons, opossums, ground-hogs, four kinds of squirrels, minks, weasels, polecats, musk-rats, Norway rats, mice and moles.

Wild fowls: Turkeys, ducks, pheasants, wild pigeons, partridges and wood-cocks.

Birds of prey: Bald eagles, hen-hawks, blue-wing hawks, sparrow-hawks, hooting owls, screech owls and night-hawks.

Field and forest birds: Whippoorwill, logcock, woodpecker, flicker, wood robin, robin (red-breast), mocking-bird, thrush, jay, red bird, tomtit, pewit, sparrow, blackbird, red-wing blackbird, ortolan, lettuce-bird, oriole, lark, dove, snipe, killdeer, plover, Indian hen, kingfisher, bluebird, martin, swallow, crow, crane, snowbird and humming-bird.

The Virginia Midland Railroad traverses the county from northeast to southwest, and there is a good toll turnpike across the county from northwest to southeast. The character of the public roads is fair, with the disposition to improve.

Culpeper, the county-seat, is on the Virginia Midland Railroad. It is a town of 2,100 inhabitants, and enjoys a good trade with the surrounding country. It is one of the most thrifty towns in the State.

Newspaper: Culpeper *Exponent* (weekly).

CAROLINE,

Though classed as one of the Tidewater counties, is in part upon the primary or archæn formation. It was formed in 1727 from Essex, King and Queen and King William; is about twenty-eight miles long and twenty wide; contains 335,354 acres of land. Population: White, 7,359; colored, 9,322; total, 16,681; males, 8,203; females, 8,478.

It is drained by the Rappahannock, the Mattaponi, the Pamunkey and their tributaries, which are numerous, and is one of the best-watered counties in the State. The various rivers and creeks give much bottom land (which is very productive) and fine water-power and mill-sites.

The northern boundary of this county extends to within eight miles of Fredericksburg, and the southern to within twenty of Richmond city.

I extract from the Caroline Hand-Book, 1889:

"The soil of the county is easily cultivated, readily improved, and when treated in a farmer-like way, very productive. It produces winter wheat with a range of from five to thirty bushels per acre, corn from fifteen to seventy-five bushels per acre. Red clover grows luxuriantly on the lowlands and improved uplands, and orchard grass and timothy are grown to a very considerable extent. The several varieties of field pease are grown in great abundance, both as an invigorator to the soil and as a forage crop. Oats, both spring and winter, are successfully grown. In a word, all of the cereals whose habitat is near the 38th parallel, which passes near the centre of the county, abound. The chief industry in the southern and middle portions of the county is the

cultivation of bright tobacco, both sun and flue-cured, for which Caroline has long been famous.

“Sweet and Irish potatoes are grown with a surplus for market, and all vegetable products abound. The lands along the Richmond, Fredericksburg and Potomac Railroad are peculiarly adapted to the trucking business, and that interest, whenever tried, has proven successful. The facilities with which the markets of Richmond, Washington, Baltimore, Philadelphia and New York can be reached (being only 12 to 16 hours from the latter) make this portion of the county an inviting and remunerative field for parties wishing to engage in this work. In the wide and productive Valley of the Rappahannock, large crops of corn, wheat, rye, clover, and hay are raised. Stock farms are increasing and more attention is being paid to this industry each year with satisfactory results.”

But to the growth of fine tobacco is a large portion of the soil of this county more particularly and specially adapted. Nearly all classes of tobacco can be grown here successfully. There is a good deal of stiff clay land, which, when properly fertilized and drained, can be made to produce a good article of large, heavy tobacco suitable for export trade, and usually known as “shipping.” “Bright” tobacco also, coal and flue-cured, has been successfully raised here. The experiments of some of our planters with this class of tobacco demonstrated beyond doubt by the quantity raised per acre, and the prices for which it has sold, that bright tobacco can be profitably raised on much of the soil in this locality. But for the production of fine manufacturing chewing tobacco this county yields the palm to no other locality in Virginia, nor, indeed, to that of any other State. This particular sweet sun-cured tobacco has been for a long period the product of this county, and it has been during this whole period an acknowledged fact by connoisseurs that the best chewing tobacco has been manufactured from Caroline fillers. There is in this article a peculiar flavor and aromatic taste which lovers of the “weed” most delight in; and which, it is stated by competent authority, is not found in samples of similar texture and appearance grown elsewhere. The remark is often heard on the Tobacco Exchange in Richmond, as made by buyers and manufacturers, that while samples from other sections may be as fine in texture, as fancy in appearance, still they had not the “chew” of Caroline tobacco.

These tobacco lands in this county can be purchased at a very low figure. Many farmers having too much land (as nearly all the old inhabitants have) would sell in quantities to suit, without improvements. Many have bought land without a dollar and paid for it altogether from tobacco, and have added other farms to their possessions. One planter gave \$1,500 for 300 acres of land, planted six acres in tobacco, and sold crop for \$1,800 net. There are many instances of planters commencing much in debt with mortgages on their property, and raising large families, who have paid their indebtedness, improved and added to their property, and all from tobacco.

All fruits thrive, and apples (especially the celebrated winesap), peaches, pears, grapes, strawberries, raspberries, etc., are grown, though chiefly as yet for home use. Blackberries, dewberries, huckleberries and black raspberries are abundant in the wild state.

All varieties of small fruits have their wild or uncultivated varieties, and the native grapes have been proved by experiment to have fine wine-making qualities. There have been no experiments made by experienced wine-makers in this

county, but as much as one hundred dollars per acre has been realized by the sale of Concord grapes, in barrels, at the depots. And the Norton Seedling, a native variety, is sold this year at seventy dollars per ton, to be made into wine eighty miles from the county. All foreign grapes that have been tried do well.

The native live stock is being improved. There are stock-farms breeding successfully Jersey, Guernsey, Red-polled and Short-horned cattle; Southdown, Cotswold and Hampshire-down sheep; Berkshire and Duroc Jersey red swine, and improved poultry.

The dairy interest is fast gaining a hold on our people, and the ready sale found for gilt-edge butter in the markets of Richmond and Washington affords ample encouragement.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,085	\$142,886
Cattle	5,167	56,176
Sheep	1,407	2,897
Hogs	3,420	9,027

Lumber abounds; pine, oak, hickory, walnut, beech and other timber is in abundance, and can be purchased in merchantable condition at the saw-mills, of which there are thirty-eight in the county, at from \$5 to \$10 per 1,000 feet.

The climate of Caroline leaves nothing to be desired. The season during which work is suspended being only a week or more in which ice is secured, the extremes of heat and cold are rarely felt, and the seasons are generally good. There is an exceptional absence of storms and blizzards; hurricanes and northerns are unknown. The healthfulness of the county is largely insured by the abundance of pure, soft drinking water, and malarial fever is rare where any sanitary precautions are taken by individuals, and there is an almost total exemption from typhoid and other dangerous fevers, so fatal in some sections.

County taxation, 50 cents on \$100 worth of real and personal property for all county purposes.

Bowling Green, the county-seat, with a population of 500, is situated near the centre of the county, two miles from Milford station, on the Richmond, Fredericksburg and Potomac Railroad, before mentioned. It contains the county court-house, four churches, a large tobacco warehouse, a number of carriage and wagon factories, with blacksmith shops, carpenters, tinnery, etc. There are large male and female academies liberally patronized, which, together with the primary and graded free schools, afford ample educational advantages. The *Caroline Sentinel*, a widely-circulated weekly newspaper, devoted to the interests of the county and good government generally, is published there. The town is becoming popular as a summer residence for Richmond people, and is admirably located on a plateau that gives perfect natural drainage. It being chiefly a residential town, the houses and yards are kept in fine order and present a fresh and most inviting appearance, with wide clean streets and sidewalks, abundant shade trees and lovely flowers. There are five daily mails, and the New York morning dailies can be read at dinner.

Number of public schools: White, 43; colored, 31; total, 74.

Monthly average temperature for 1892, 56°; total annual rainfall about 44 inches.

CHARLES CITY

Was one of the original shires of Virginia, and was established in 1634. It is thirty miles long, with a mean width of about eight miles, and contains 113,405 acres. Population: White, 1,348; colored, 3,718; total, 5,066; males, 2,818; females, 2,448.

This county occupies the peninsula formed by the Chickahominy and James rivers. The surface is mostly level or gently undulating. The lands on the rivers are generally of excellent quality, and constitute a large proportion of the area. Many fine estates and sundry old colonial residences grace the banks of the James; among them the homes of two Presidents, William Henry Harrison and John Tyler.

The productions are corn, wheat, oats, peanuts, clover, and the finest timothy hay and orchard grass. The grape produces abundant crops, and is rarely affected with disease. Cherries and pears succeed admirably. The climate and soil are suitable to an endless variety of fruits and vegetables, many of the former growing wild and in great profusion.

LIVE STOCK.

	Number.	Value.
Horses and mules	934	\$48,014
Cattle	1,710	17,439
Sheep	800	2,340
Hogs	2,829	5,417

Poultry-raising and dairying are increasing, and both are profitable. An enterprising Northern settler has been experimenting here in grape culture with signal success.

Wild animals: Foxes, raccoons, opossums, minks, skunks, otters, musk-rats, hares and squirrels.

Wild fowl: Turkeys, pheasants, ducks, geese, sora.

Birds: Hawk, buzzard, owl, crow, partridge, woodcock, mocking-bird, wren, jay, killdeer, plover, red robin, swamp robin, dove, bobolink, redbird, bluebird, wood robin, sparrow, house-martin, eagle, marsh hen, wild gull and whip-poorwill.

The timber consists of oak, pine, elm, ash, poplar, etc. Large amounts of ship timber, cord wood and poplar for wood pulp are annually sold and shipped to Northern markets.

There are four large saw-mills now in the county, and much of the timber has been marketed.

Both rivers and all the creeks are filled with fish.

Lying, as Charles City does, between two navigable rivers, and having a railroad (the Chesapeake and Ohio) skirting its northern boundary and passing through its northwestern corner, its means of transportation to the markets of the country are convenient for all parts of the county.

Marl is abundant, both eocene and miocene—some of it rich in green sand. All kinds act finely on the land, and it only requires agricultural capital for its abundant use to make the whole county a garden.

Number of public schools, 23—white, 11; colored, 12.

Church buildings ample for the congregations of the several denominations.

CHARLOTTE

Was formed in 1785 from Lunenburg. This county has 297,927 acres of land. Population, 15,077—white, 5,716; colored, 9,361; males, 7,274; females, 7,803. The greater part of the county is watered by the Staunton and its tributaries, and some of the branches of the Meherrin have their sources in the eastern edge of Charlotte. There is much productive bottom land, and the soil is generally good, especially suited to fine tobacco as well as to cereals and grass.

There was formerly much wealth in this county, and now its fine soil, abundant water-power, fine timber and healthy climate make it very desirable as a residence. Many settlers from the North have located here and are pleased with the country. The following are quotations from such settlers:

"I am a native of New York, and came here to escape the long, cold winters of the North; am delighted with the climate and with the people, and believe there is a great future for Virginia.

"I am getting my lands to grass, to which they are well adapted, and intend devoting my attention to stock-raising, believing that, owing to the mild, short winters, it can be made very profitable, much more so than North, where it has to be fed seven months in the year."

Another writes: "The soil, as experience has shown, is capable of high improvement and cultivation. It produces, under proper management, the finest heavy shipping tobacco in the world. Its productiveness, a single fact, I believe, from actual experience, is capable of demonstration: When leaf tobacco sold from \$10 to \$18 per hundred weight, in an ordinary season, a farmer who could expend \$40 per acre in labor and fertilizers would realize from almost any land a return of \$80 per acre. I have known from thirty-five to forty bushels of wheat per acre to be produced on Roanoke bottoms; and when tobacco has been followed by wheat and clover on uplands, such lands are improved, and the result profitable. The advantage of this rotation is that you get three crops from the same fertilizer."

A grape-grower writes: "I moved to this county from Missouri. I grew grapes there, but out of eleven crops I succeeded only one year—they being blighted by rot. I have tried them here six years, and *never failed*. My neighbor, Mr. McCluskey, once raised grapes in California. He says this is the best grape soil he ever saw."

Another: "This section for small fruits and vegetables, in my opinion, is the best in the world. The settler should early arrange to have grapes, raspberries, strawberries, etc., not only for market, but for his family. Peaches he can have generally from June to November, right from the trees. At any rate, that is the way I have them.

"Agriculture here will not bring wealth in a day; neither will it do so anywhere. But to the careful, intelligent and provident farmer, who has some ready means with which to begin, there will come in due time a luxurious competence, and he will have a home as delightful and as charming as any in the world."

Here is what a native accomplished: "At the close of the war I found myself stripped of every vestige of property, and commenced in August, 1866, with a wife and four children, as an overseer. My wages were from \$300 to \$400 a year, with full finding. At the end of four years I had saved enough to buy a plantation of 350 acres at \$6 per acre, for which I paid one-third cash, balance

in one and two years. Since that time I have devoted myself constantly and exclusively to my business as a planter, working with my own hands, receiving at the same time valuable assistance from my wife and sons, four of whom were now grown. During this time I have sustained losses by securityships which exceeded a legacy which I had received. I am now the owner of two first-class farms of 800 acres, with as comfortable a home as can be found in the county, fully equipped, costing upwards of \$8,000; every cent of which I have dug out of the ground, over and above the support of my family, and the payment of every just obligation."

Here is another: "I commenced work in 1875 upon fifteen acres of land, for which I paid \$400; owned one cow and one old horse. I now own 181 acres of land, costing, with improvements, \$2,230; five head of horses, worth \$500; eleven head of cattle, and money ahead—all made on my farm. In 1887 I sold tobacco crop from eleven acres of land for \$1,600; in 1888, from same number of acres, for \$1,080. In addition to tobacco crop these years I made eight to ten stacks of oats, one hundred barrels of corn, and a wheat crop. My total expenses were \$400 for each of these years, and I have used only two and a half tons of fertilizer in ten years. I have supported my family during this period, and raised eight children, and owe no man anything."

A tobacco planter's experience: "In 1887, from thirteen acres of land, I sold 17,200 pounds of shipping tobacco at \$9.43 (net), or \$1,621.96; average per acre, \$124.76. I have never fertilized my land as I should. I am confident 2,000 pounds of tobacco can be produced from an acre. Several instances of 2,000 pounds to the acre have been reported in past years, and well authenticated. Lands that will yield a heavy crop of dark, rich tobacco will produce abundant crops of wheat or corn—thirty to thirty-five bushels of the former or fifty bushels of the latter. A luxuriant crop of clover or other grasses usually follows wheat upon our improved tobacco lands."

Maj. R. V. Gaines, in his admirable Hand-Book of Charlotte county, makes the following statement, and sustains it by evidence: "In the production of continental and shipping tobacco, bright wrappers and sweet fillers for the home trade, Charlotte county stands pre-eminent. For the production of the former, our bottom-lands and the heavy loams upon the hills of Staunton River and its tributaries, Cub, Ward's Fork, Roanoke and Twitty's creeks, have been famed for more than a century. For the latter, the light-gray lands with yellow clay sub-soil, bordering Turnip, Horsepen and Sandy creeks, including the elevated thin ridges of our water-sheds, produce a type which cannot be excelled in toughness, sweetness, and silkiness of fibre."

Minerals occur in great variety; among which may be mentioned iron ores, copper, mica, kaolin, soapstone, etc., some of which have good working qualities, and have been partially developed.

The Lynchburg and Durham Railway will, no doubt, lead to the development of the large and rich veins of iron ore from eight to sixteen feet in width, located by Dr. Rogers, on the east side of Hat Creek, near the Charlotte line, extending down to its junction with the Falling, and crossing the Staunton River at Brookneal. The ore is brown oxide, associated with mica slate, ranges north-northeast, and has a high eastern dip, and occurs in large masses, sometimes ochreous.

There are also valuable beds of steatite in both the northern and southern portions of the county; this has been utilized for fire-brick and hearths, and doubtless when developed will prove commercially valuable.

Stock-raising forms an important industry as an adjunct to agriculture. The best farmers raise their own horses, mules, cattle, sheep and hogs. Some raise an annual surplus, which bears remunerative prices in the local markets. Number of hogs, 4,465; value, \$9,335.

Charlotte is in what is known as the "race-horse region" of Virginia. In the *ante-bellum* days many of the best thoroughbreds of England and some of the best types of the Arabian horses were imported into this section. Number of horses, 2,117; value, \$98,282.

All the best strains of the English blooded cattle have been introduced here, but owing to the insufficient attention given to the grasses and winter feeding, only the smaller breeds have been profitable as a general rule. Though some beeves are fattened annually, this cannot be considered a beef section. Number of cattle, 4,907; value, \$40,815.

In no portion of the United States can small flocks of sheep, properly tended, yield a larger profit. Such is the variety of grasses, weeds, shrubs, etc., which spring spontaneously from the soil in this genial climate, that our poorest, worn-out lands will carry ten sheep to every one hundred acres throughout the year without any feeding, except when the ground is covered with snow. Scarcely any food will be taken by them then, if they have access to a growth of young pines and cedars. Lambs can be dropped at any season of the year and raised profitably, those coming in December being ready for the early spring market. The Southdown and Merino breeds, or their grades, seem best adapted to this locality. They yield annually about five pounds of wool to the clip, and the muttons of the former will weigh from 150 to 200 pounds gross when matured. Number of sheep, 2,490; value, \$5,016.

More than half of the surface of the county is covered with forest, much of which is second growth, which springs up spontaneously on lands left out of cultivation. While the latter furnishes useful material for constructing fences and farm buildings, the most valuable lumber comes from the original growth.

The chief varieties are white oak, post oak, turkey oak, poplar, heart pine, hickory, dogwood, persimmon, cedar, walnut, ash, wild cherry, beech, birch, maple and locust, which are regarded as the most valuable; but there are also used for interior purposes, the black, red, Spanish and willow oaks, honey locust, sweet and black gum, sycamore, sassafras, old-field pine and some half dozen varieties of the elm.

There are fifteen saw-mills converting the more valuable of the woods into lumber.

Our forests and fields moreover abound in great variety of nuts and acorns, which furnish valuable food for man and beast. Among these are the white and black walnut, more than a dozen varieties of hickory-nuts, pecans and shell-barks, chestnuts, beech-nuts, hazel-nuts, chinquepins and thirteen varieties of acorns. Some of these bear more or less every year, furnishing ample food for game and wild animals. About every other year there is a heavy mast, sufficient to fatten hogs and keep stock well through the winter.

FRUITS.

The provision made by nature in the way of wild fruits is abundant; beginning about the middle of May with strawberries, followed by raspberries, dewberries, blackberries, whortleberries, gooseberries, mulberries, currants, cherries, plums, apples, peaches, pears, grapes, persimmons, haw apples, black and

red haws, etc.; all of which appear in great variety and of superior excellence. So abundant is the supply that, with ordinary care, the table can be furnished the year round from this source alone, besides furnishing a large quantity for canning and drying, which find a ready and profitable market in the cities.

Owing to this abundant provision by nature, no section of the United States has a greater variety or is so well stocked with game-birds. Standing at the head is that incomparable bird—the wild turkey—on its native heather. Large flocks may be seen roaming over the field, some of which, at full maturity, reach twenty-five pounds in weight. In the forests pheasants are often found, and in every field one or more covies of quail. These furnish sport during the latter part of the fall and winter, while in the later winter and spring we have wild duck, snipe and wild geese upon our own water-courses in endless profusion. In August and September the woodcock makes his appearance.

Major Gaines, in his Hand-Book, says: "Of late years deer have become quite abundant in some sections of the county. But the peculiar delight of the American gentleman of African descent is the old hare, squirrel, opossum, coon, otter, beaver, mink, weasel, musk-rat and ground-hog, which furnish not only meat for the larder, but furs to replenish his empty treasury or eke out his scanty garments.

"From colonial days down to the present fox-hunting has been the favorite pastime of the Virginian; he is never so happy as when mounted on a blooded steed, with long horn around his neck, and followed by a large pack of hounds."

The Staunton River has steam and batteaux navigation through the county, and is being annually improved by the United States. The railway facilities are admirable. The Norfolk and Western touches the northern end of the county; the Lynchburg and Durham touches a point on the west; the Richmond and Danville runs through the centre, with a branch from Keysville on the eastern part of the county to North Carolina, and the Atlantic and Danville passes just south of the county. The county roads are neither as good nor as bad as those of some counties.

Public schools and churches are numerous.

Number of public schools, 67—white, 38; colored, 29. Number of churches, 33; denominations, 5.

Monthly average temperature for eight months to November 30, 1892, 60.8°; monthly average precipitation, same period, 2.69 inches; total for eight months, 21.52 inches. Reported from Washington by State weather service.

County tax for all purposes, 53 cents on \$100 worth of property.

CAMPBELL

Was formed in 1781 from Bedford. It is nearly a square of twenty-five miles to a side, and contains 325,599 acres of land. Population, including Lynchburg: White, 21,283; colored, 19,804; total, 41,087; males, 19,465; females, 21,622.

It lies on the south bank of James River, by the tributaries of which, and by Otter and Falling rivers and other tributaries of the Staunton, it is well watered. These streams give to it any quantity of water-power for manufacturing purposes.

There are about twenty-five grain-mills, several bark and sumac-mills.

The surface is rolling and hilly. The soil is fertile and particularly adapted to the production of fine, high-priced tobacco, as well as grain and grass. Land is valued at from four to twenty dollars per acre, and much of it is worth

a great deal more. There is an abundance of timber of the usual growth of this section, a large part of the area being clothed with the original forest trees.

The timber consists of hard yellow pine; white, black, red and chestnut oaks; poplar, locust, walnut, hickory, black gum, sweet gum—a magnificent tree, growing tall and straight, furnishing a fine lumber for cabinet work and hubs of wheels. The sour-wood grows in great quantities on the ridges, does not attain much size and is only used for fire-wood, but twice a year ornaments the forests.

More than half of the lands in the county are in original growth. There are twelve saw-mills. Pine and hickory are mainly used for lumber.

The productions are wheat, corn, oats, rye, sorghum, grass, vegetables and fruits of nearly every description. The improved lands will produce from fifteen to thirty bushels of wheat, and from fifty to seventy-five bushels of corn to the acre; oats and rye grow well, and make a good yield; sorghum produces large crops, both stalk and syrup, and could be made to the county what the beet has been to France and Germany; red clover, red-top millet, orchard and timothy grasses grow well, and when properly managed produce large and paying crops. The quality of her shipping tobacco is equal to that raised in any county. All garden vegetables—peas, beans, watermelons, muskmelons, pumpkins, sweet and Irish potatoes—are raised in abundance, and of superior quality, and at paying prices. The specialty of Campbell is fruit; the peach for flavor, size and quality, cannot be beaten; the apple, pear, plum, cherry, figs, grapes and all the lesser fruits, the county is especially adapted to. There are orchards in the county that have seldom failed to produce a fair crop of fruits every year since they commenced bearing, and in every case have paid the owner well for his outlay.

Horses, cattle, hogs and sheep are raised for home supply, and could be largely increased, with profit to the raiser; sheep, when raised for mutton and wool, pay well; and the native blue-grass is specially suited for close grazing.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,024	\$152,508
Cattle	5,994	60,998
Sheep	1,563	3,185
Hogs	4,981	11,090

Wild animals: Deer, raccoon, opossum, fox, ground-hog, hare, squirrel, muskrat, mink and skunk.

Wild fowl: Turkey, duck, goose, pheasant, partridge and woodcock.

Birds: Hawk, owl, buzzard, crow, dove, lark, plover, killdeer, blue jay, mocking-bird, oriole, thrush, catbird, wren, tomtit and humming-bird.

The minerals consist of several varieties of iron ore, manganese and steatite. Some valuable mines have been worked for a good many years—those lying on Stonewall and Falling creeks furnishing from 80 to 84 per cent. of peroxide of iron. Ore is found almost everywhere in the county, but has been more particularly developed on the line of the Virginia Midland Railroad, where large deposits of manganese have also been discovered. Some of the steatite is of beautiful texture, and makes handsome and durable backs and jambs for fireplaces.

Barytes is mined and ground in the county.

Taxation for county purposes, 60 cents on the \$100 valuation of real and personal property, to-wit: County schools, 10 cents; district schools, 10 cents; railroad tax, 15 cents; county expenses, 25 cents.

The James and Staunton rivers, the first emptying into Chesapeake Bay, and the latter into the Roanoke (which empties into the Albemarle Sound), afford water transportation for a portion of the productions of this county; but much the larger portion goes by railroads. The Virginia Midland Railroad traverses it from north to south; the Norfolk and Western runs through the northern section from east to west, and its Lynchburg and Durham branch divides the county, passing by the county-seat; the Richmond and Alleghany on its north border—all combine to give this county peculiar advantages and facilities for markets in every direction.

Its advantages for manufacturing are equal to those of any county in the United States; it has the water, iron ore, timber, and the railroads will bring cotton from the South, wool and coal from the West. There is no county the climate of which is better adapted to the profitable growth of wool; all experience goes to establish this fact. Falling River runs through the eastern part of the county, and near the Brookneal depot has several admirable sites for manufacturing purposes; Staunton River on the south side and near the depot, whose waters flow at the foot of a gentle southern slope, on which is situated the village of Brookneal, and it seems to have been formed by nature for the purpose, for all the water can be had at a small expense to make Brookneal one of the largest manufacturing cities in the United States. No county is better supplied with springs, branches, creeks and rivers for man and beast, or any purpose man may use water for; and still, with all its advantages, there is not the first woollen, cotton, shoe or lumber factory in her borders, except at Lynchburg. Campbell has a large surplus of land for sale.

Lynchburg, situated on the banks of James River, in the northern end of the county, is the fourth town in importance in the State, and contained in 1880 a population of 15,959, which has greatly increased since. The three railways which traverse this county cross each other here, making it a fine centre of trade. There are in Lynchburg, banks and banking houses, newspapers, fine hotels, churches, many public and private schools, tobacco factories, and in the suburbs rolling-mills, foundries, large flour-mills, a large cotton-mill, bark and extract manufactories, and numerous other enterprises. (See chapter on "Cities.")

Number of public schools in Lynchburg, 60—white, 32; colored, 28; in county, 95—white, 81; colored, 34.

Monthly average temperature for twelve months ending 30th November, 1892, 56.9°; total monthly rainfall for the same period, 39.77 inches; average monthly, 3.31 inches.

There are over seventy churches, occupied by seven denominations. One weekly newspaper, the *Campbell County Record*, is published at Rustburg, the county-seat.

CLARKE.

Clarke county was formed from Frederick in 1836. It is seventeen miles long and about ten wide, and contains 109,173 acres. Population, 8,071—white, 5,617; colored, 2,454; males, 4,051; females, 4,020.

This beautiful county is, in proportion to its area, almost, if not quite, the richest in the State. The Shenandoah River flows through the eastern part of the county, at the foot of the Blue Ridge.

The surface of the main part of the county, lying between the Shenandoah and Opequan rivers, is gently undulating—just sufficiently so for drainage. The soil is of unsurpassed fertility, and peculiarly adapted to the growth of wheat and corn, clover and timothy. Blue-grass is indigenous, and soon forms, on uncultivated fields, a sod equal to the far-famed fields of Kentucky. The land east of the Shenandoah River is mountainous and generally covered with valuable timber of pine, oak, chestnut, locust, cedar, hickory and poplar. There are fifteen saw-mills and much lumber is sawed. When cleared the mountain sides produce blue-grass, affording fine pasture for sheep and cattle. Sumac grows in abundance on the mountain fields and affords a source of considerable income to the inhabitants.

Wheat, corn and hay are the special productions, with all kinds of fruits of this latitude for home consumption, and apples for export.

Large numbers of cattle, sheep and hogs are grazed and fed, and sold in Baltimore, Philadelphia and New York markets, and many fine horses are sold to city buyers.

LIVE STOCK.

	Number.	Value.
Horses and mules.	3,595	\$179,405
Cattle.	5,670	83,562
Sheep.	9,452	33,864
Hogs.	5,903	13,754

The wild animals are hares, squirrels, ground-hogs, opossums, raccoons, wild-cats, polecats.

Wild fowl: Wild turkeys and pheasants.

Birds: Quails, doves, larks, crows, blackbirds, sparrows, robins, bluebirds, wild pigeons.

Numerous flour mills are located in the county, manufacturing flour extensively for the Baltimore and other markets.

It belongs to the limestone formation; the limestone being readily obtained on almost every farm for building purposes and for burning into lime. Iron ore of the richest character is found in great abundance, and has been mined and shipped to the furnaces of Pennsylvania. Copper and lead are also found.

The Shenandoah Valley Railroad, extending from Hagerstown, Maryland, to Roanoke, Virginia, passes through the county from north to south; the Valley branch of the Baltimore and Ohio Railroad passes through the northwestern part of the county; and the Washington and Ohio Railroad, when completed, will pass through from east to west. Five macadamized turnpikes traverse the county.

Berryville, the county-seat, is a flourishing town of 1,500 inhabitants, beautifully situated on the Shenandoah Valley Railroad. It contains seven churches, a graded school of high character, one bank and a number of mercantile establishments. The other villages in the county are Millwood, Boyce and White Post.

The *Courier*, a weekly, is published at Berryville.

Churches of the various Christian denominations are found in the villages and in the country, and public schools in sufficient number to meet the demands of the people.

Number of public schools, 38—white, 25; colored, 11.

Average annual temperature for 1892, about 53°; annual rainfall, 34.98 inches; average monthly, 2.93 inches.

The climate is healthy; the people intelligent and enterprising; the farms well improved with buildings and fencing of the best character, and the system of cultivation thorough and profitable.

Taxation for county purposes, 16 cents on the \$100 value of real and personal property.

CUMBERLAND

Was formed in 1748 from Goochland. It is thirty-two miles long and about ten miles broad, with the Appomattox River running on its south, the James on its north boundary, and Willis River through its western part. The Norfolk and Western Railroad runs through a portion of its southern border. The surface is undulating and the soil productive. Number of acres of land, 189,886. Population: White, 2,860; colored, 6,622; total, 9,484; males, 4,589; females, 4,893.

The soil is very good, with generally a red-clay sub-soil, and is capable of being made very productive. The lands on the rivers are very fertile. No county in the State probably is more healthy than this, and the inhabitants have every reason to be satisfied with their homes, and persons seeking new homes will find many inducements here.

The products are tobacco, wheat, corn and oats. The cultivated grasses, particularly clover, succeed admirably on improved lands.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,266	\$63,382
Cattle.	3,210	30,936
Sheep.	1,253	2,454
Hogs.	2,389	4,971

The lands lie well for cultivation, are easily drained, and rarely so broken as not to be secured against washing, if hillside ditches are properly run. It has still much original growth in the forests, with an abundance of excellent building material. Saw and grist-mills in every neighborhood, with church and school privileges as good as are to be found in most counties of the State. It has no improved highways; the dirt roads are very good in summer.

Wild animals: Deer, fox, raccoon, opossum, squirrel, ground-hog, hare, beaver, otter, musk-rat, mink, weasel.

Wild fowl and game birds: Turkey, pheasant, geese, duck, partridge, woodcock, snipe, plover.

Birds of prey: Owls, hawks.

Other birds: Crow, robin, blackbird, dove, redbird, bluebird, thrush, sparrow and wren.

There have been no mineral discoveries in this county to excite attention. Some surface specimens of magnetic iron ore have been found, but no explorations made of any magnitude. Near the village of Ca Ira, on Willis River, a paint mine was discovered years ago, which could no doubt be worked profitably if cheap transportation were at hand.

A most remarkable cluster of mineral springs has been discovered in this county within a third of a mile from the town of Farmville. There are lithia, sulphur, chalybeate and magnesian waters flowing from the earth within a few yards of each other—a wonderful and beneficent freak of nature—which have attained considerable reputation.

Coal is found in the county, but it is only used for furnaces and blacksmiths' use. It is near Farmville, and has lately been undergoing renewed development, with good prospects.

Cartersville, on the James River, is the principal village, and much of the produce of the county is shipped from this point by the Richmond and Alleghany Railroad, which runs near the north border of this county, on the opposite side of the river. A substantial bridge across the river at Cartersville places the farmers of the northern end of the county in easy reach of the railroad.

The completion of the Farmville and Powhatan Railroad through this and Powhatan counties to Bermuda Hundred has opened up the county, and it has fine railroad facilities.

A correspondent of the Department in 1886 wrote: "Cumberland offers many natural and social advantages to those seeking homes in Midland Virginia. Whilst our lands are not all as fertile as the 'delta of the Nile,' and no 'fountain of youth' flows within our borders, we are blessed with a mild and healthful climate and a soil kind and productive, always responding promptly to diligent tilling and liberal fertilizing. The soil of this county is as varied as its products. Tenacious red clay abounds in almost every part of the county, peculiarly adapted to wheat and red clover, and yielding not unfrequently thirty bushes per acre of the former crop. Much of our land is of the light gray type, where the tobacco plant delights to thrive, producing often from one thousand to fifteen hundred pounds per acre. Here is grown in highest perfection the far-famed shipping tobacco of Virginia. Along our rivers and creeks the rich alluvial bottom lands produce large crops of corn and oats. All of the cereals, garden vegetables and orchard fruits adapted to this latitude can be successfully and profitably grown here. Tobacco and wheat are the principal crops grown for market in the interior of the county.

"New industries have sprung up here since the war, such as the manufacture of sassafras oil and the gathering and curing for market of the sumac leaves. These spontaneous products, that were formerly regarded as nuisances, are now converted readily into money. Our vast pine forests, that everywhere meet the eye, will, I believe, be a source of profit at no very distant day. Many of our farmers are turning their attention to sheep husbandry, and find it highly remunerative. Sheep thrive here on the great variety of herbage, and are free from many diseases that prevail in some other States. They require but little feeding during our usually mild winters, and the mutton fattened on our native broomsedge is of excellent quality.

"As to the average yield of different grain crops I would say: Of corn, 5 barrels per acre; wheat, 10 bushels; oats, 15 bushels; rye, 10 bushels. The average yield of tobacco I would put at 1,000 pounds per acre among the good planters; but so much is grown of late years on poor, worn-out lands, without proper fertilizing and judicious culture and attention, that the general average would have to be considerably reduced if we take into account this class of tobacco-growers.

"Our lands are worth all the way from \$3 to \$30 per acre, depending on quality, location, etc. Many farms are in a high state of cultivation, with good fences, buildings, etc.; others are run down and 'out at the heels,' for want of means to repair and improve, or lack of energy and industry on the part of the owners."

Number of public schools, 47—white, 25; colored, 22.

Churches of different denominations are abundant.

The levy for county purposes is 90 cents on the \$100 worth of real and personal property.

DICKENSON

Was formed in 1880 from Russell, Wise and Buchanan. It is nearly a parallelogram, with two sides of twenty-one miles and the other two of fifteen miles in extent. It is bounded on the northwest by the Cumberland range of mountains, which separate it from Kentucky, and on the southeast by the Big Ae mountains, and contains about 313,597 acres. Dickenson is watered by the head streams of Russell's Fork of Big Sandy River flowing north into the Ohio.

Population: White, 5,051; colored, 26; males, 2,540; females, 2,537; total, 5,077.

The surface of the borders is very rugged, but in the central parts it has many fine valleys and much fertile land. The products are wheat, corn, oats, rye, barley, buckwheat, tobacco, flax, melons and grass. Vegetables and fruit are raised in great abundance and of good quality.

This and the other counties of Trans-Appalachia are in the great grazing region of the southwestern part of Virginia. The lands vary in texture with the character of the prevailing rocks, but the greater part of them are good grass lands.

LIVE STOCK.

	Number.	Value.
Horses and mules	909	\$43,478
Cattle	4,554	35,859
Sheep	3,763	3,914
Hogs	2,996	3,051

Timber of the most valuable kinds is found here in great abundance—three-fourths of the area being in original forest of oak, hickory, poplar, elm, ash, maple, wild cherry, walnut, pine, etc. There are only three saw-mills in the county, sawing walnut, poplar and pine.

The minerals of this county have not been developed, but iron ores and coal (bituminous, splint and cannel) are known to be abundant, and many mineral waters of great value to the invalid. Silver and salt are said to have been discovered, and coal is now being mined.

The number of public schools, 25—white, 25; colored, —.

Wild animals: Bear, wild-cat, deer, raccoon, fox, opossum, squirrel, hare, mink, weasel, skunk and ground-hog.

Wild fowl: Turkey and duck.

Game birds: Partridge, wild pigeon and woodcock.

Predatory birds: Eagle, owl, hawk, buzzard, raven and crow.

Field and forest birds: Robin, thrush, redbird, catbird, woodpecker, rain-crow, lark, martin, bluebird, pewit, swallow, whippoorwill and snowbird.

The nearest State weather station is at Big-Stone Gap, in the adjoining county, which reports monthly average temperature for year ending 30th November, 1892, 5.19°; total monthly rainfall for same period, 55.05 inches; average monthly, 4.59 inches.

DINWIDDIE

Was formed in 1752 from Prince George. The surface is in some parts undulating, but mostly level. The soil of the undulating portion is light-clay loam, susceptible of the highest state of improvement. The Appomattox on the north boundary, and the Nottoway on the south, with their tributaries, give ample drainage to the county, and fertile bottom lands.

The population, including Petersburg, 36,195; white, 15,570; colored, 20,619; males, 17,192; females, 19,008. The area of the county is 326,075 acres—102,517 acres arable land and 192,529 acres in original and second-growth forest.

The staple productions are tobacco, corn, wheat and oats, while cotton, peanuts, potatoes (sweet and Irish), melons, and vegetables of every description grow well in this county. In the eastern portion of the county, and in the section near Petersburg, the farmers are engaged in trucking, and, having easy shipping facilities, large quantities of trucks and berries are shipped annually from the county. This is a great peanut county, and Petersburg is the centre of the peanut trade.

All the clover and grasses flourish well, and give fine crops of hay, when seeded on the improved lands on the creek and river bottoms and on newly cleared land.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,974	\$100,685
Cattle	4,839	41,186
Sheep	1,777	3,408
Hogs	4,029	7,200

The large area of forests consists of all the oaks, the hickory, ash, dogwood, walnut, elm, persimmon, poplar and pine, original and second growth. Lumber and wood are largely marketed.

Wild animals: Deer, raccoon, opossum, fox, beaver, otter, mink, musk-rat, squirrel and hare.

Wild fowl: Goose, duck, turkey and pheasant.

Game birds: Partridge, woodcock and snipe.

Predatory birds: Owl, hawk, crow and buzzard.

Field and forest birds: Dove, lark, robin, blackbird, redbird, bluebird, thrush, catbird, bobolink and sparrow.

There is an abundance of marl in the eastern portion of the county, and it has been used with very satisfactory results by the farmers who have tried it.

Several veins of hematite, some of them of rich ore, and of magnetic iron ore crop out in different portions of the county. Coal is also found, but has not yet been explored.

There is an almost inexhaustible supply of granite, of the finest quality, in the northeastern portion of the county. The quarries at Mayfield and Booth's have been worked a number of years, and experts declare that the stone taken from them is susceptible of the finest polish, and noted for its durable qualities. These quarries are close to lines of transportation, and very accessible.

The Appomattox River has been dredged, and is navigable for small steamers and sailing vessels to Petersburg. The Upper Appomattox Canal Company have put their canal in good condition and have a full line of boats. This canal passes along the northern boundary of the county, and is a great convenience to the farmers and land-owners of that section.

The Central Lunatic Asylum, one of the largest asylums in the United States for colored lunatics, is located at Mayfield, in this county.

The public school system is thoroughly well established in this county, with good, comfortable school buildings and a full and competent corps of teachers.

Number of public schools, 74—white, 41; colored, 33.

The churches in the county are Episcopal, Baptist, Presbyterian, Disciples and colored Baptist; also Methodist, white and colored.

Labor is abundant, and comparatively cheap.

Lands very low-priced for their real value.

County levy for county expenses, covering all county tax, 50 cents on the \$100 valuation of real and personal property.

The city of Petersburg, in this county, is an important railroad centre, and a large tobacco and cotton and wheat market. It has large tobacco factories, cotton factories, large flouring mills, a large trunk factory, and factories for the manufacture of butter-dishes, boxes, baskets and crates for fruit and berries. The materials for all these manufactures exist already, or can be raised in Dinwiddie county. The population of Petersburg at this time is about 22,680. The Norfolk and Western Railroad, from Norfolk to Bristol-Goodson, passes through the city and through the northern portion of this county for a distance of nearly thirty miles. They have handsome depot buildings and large machine shops in the city, and a branch road to City Point, on the James. The Atlantic Coast Line passes through the city and along the eastern border of the county for ten miles. It has large depot buildings and machine shops in Petersburg. (See chapter on "Cities.")

The weather service of the State Board of Agriculture reports from the station in Petersburg: Monthly average temperature, 57.2°; monthly average rainfall, 3.56 inches; total annual rainfall, 42.73 inches.

ELIZABETH CITY

Was one of the eight original shires into which Virginia was divided in 1634. Its form is nearly a square of seven miles on a side. It lies on Hampton Roads, Chesapeake Bay and Back River, and is intersected by several creeks. The surface is level and the soil fertile, some of it highly so. Number of acres of land, 29,897. Population, 16,168—white, 8,278; colored, 7,890; males, 9,860; females, 6,306.

Agricultural products: Corn, oats, potatoes and garden vegetables. Fruit: Pears, small fruits and berries succeed well. Poultry: Two poultry establishments; turkeys and other poultry are in good quantities and supply the home market.

The climate of Elizabeth City is delightful, the average temperature being 75° in summer and 44° in winter.

The supply of fish and oysters of the finest quality is almost inexhaustible. The fisheries take quantities of shad, trout, bluefish, bay mackerel, etc. .

Wild animals: Fox, raccoon, opossum, musk-rat, mink and hare.

Wild fowls: Ducks, geese and swans.

Game birds: Partridge, woodcock, snipe, reedbark and sora.

Predatory birds: Fishhawk, owl, hawk and crow.

Forest and field: Mocking-bird, catbird, martin, swallow, lark, thrush and sparrow.

There are 15,000 acres in timber, consisting of pine, gum, oak, ash and poplar.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,057	\$50,346
Cattle	1,838	15,649
Sheep	831	779
Goats	9	17
Hogs	1,303	2,863

Elizabeth City is penetrated and almost surrounded by navigable waters, and is in daily communication with Norfolk, Richmond, Baltimore, Washington, Philadelphia, New York and Boston by regular lines of steamers to each of these cities, affording great advantages to truck and fruit growers.

The Chesapeake and Ohio Railroad has its terminus at Old Point Comfort, so well known for the grand fortress located there, and the Hygeia Hotel, now resorted to by thousands as a winter sanitarium and luxurious resting-place, while in summer it is equally popular for its sea breezes and salt baths. It has stations at Hampton and Phoebus, and the Hampton and Old Point Electric Railroad and the Hampton and Newport News Electric Railroad furnish full facilities for the people. Public roads are very much improved.

County taxation: 35 cents for county purposes; 18 cents for county schools; 2 cents for district schools; 18 cents for roads; making 73 cents on the \$100 valuation of property.

Hampton, the county-seat, is a thriving town of about 5,000 inhabitants. Here is located that noble institution, the Hampton Normal and Collegiate Institute, for the education and training of negro and Indian students, with accommodation for six hundred. The admirable management and successful operation of this institution are too well known to need description. Hampton Female College is also a successful institution.

Near Hampton is also located the National Soldiers' Home for 2,500 disabled volunteer soldiers, with beautiful grounds and buildings. (See "Towns.")

Number of public schools, 31—white, 14; colored, 17.

Churches: Baptist, 4; Methodist, 4; Episcopal, 1; Presbyterian, 1; Disciples, 1; Catholic, 1; total, 12.

The manufactures consist of a shoe factory, iron foundry, sash and blind factory, and an oil factory.

Newspapers: *Evening News* (daily) and *Hampton Monitor* (weekly).

ESSEX

Was formed in 1692 from Rappahannock county—the records of the original county remaining in its archives. It lies on the south side of the Rappahannock River, about forty-five miles northeast of Richmond, and is about thirty-five miles long and six wide; area, 160,667 acres. It is well watered by numerous tributaries of the Rappahannock River, some of which are navigable.

Population, 10,047—male, 4,952; female, 5,095; white, 3,584; colored, 6,463.

The surface of the county is generally level or slightly rolling. The river lands are, where properly drained, very productive and valuable. Back from the river the soil is more sandy, but productive. On Dragon Swamp, which separates Essex from King and Queen, are some fine wheat lands with a heavy, tenacious soil of great fertility. This county was once the seat of great wealth, and, as then, still produces fine crops of corn, wheat and oats. Tobacco has been only to a small extent since the war profitably raised.

Clover and orchard-grass hay have increased greatly, a most gratifying indication of improved farming. Marl is abundant in many parts of the county, and has been applied with great benefit in days gone by. Gypsum and commercial manures are found to act well. Peanuts might be profitably cultivated.

There are several large peach orchards in this county of ten or twelve thousand trees each. Melons and fruit are largely shipped from the various wharves along the river.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,728	\$71,554
Cattle	4,576	41,078
Sheep	2,210	4,375
Hogs	8,363	5,350

Rappahannock River is well stocked with fish and oysters, and is navigable to the city of Fredericksburg, which is about fifty-five miles above Tappahannock, the county-seat of Essex.

Wild animals: Deer, fox, raccoon, opossum, squirrel, mink, weasel, musk-rat, polecat and hare.

Wild fowls: Turkey and pheasant.

Game birds: Partridge, pigeon, woodcock, snipe, sora and reedbuck.

Predatory birds: Eagle, owl, hawk, crow and buzzard.

Water fowl: Geese, ducks, cranes, marsh hens, willets and gulls.

Field and forest birds: Mocking-bird, wren, jay, killdeer, robin, dove, bobolink, redbird, bluebird, martin and sparrow.

The Weem's line of steamers run three boats a week to and from Baltimore, and a boat twice a week to Norfolk.

Rate of tax for county purposes: For county levy, 35 cents on \$100 value of property; county roads, 10 cents on \$100 value of property; county schools, 5 cents on \$100 value of property; district schools, 15 cents on \$100 value of property.

Tappahannock, the port of entry for the district, has 700 or 800 inhabitants, a large sumac mill, canning-house, and a foundry and machine shop. This town was laid out on the same plan and on the same day that Philadelphia was.

Number of public schools, 44—white, 23; colored, 21.

There are six or seven denominations with churches in the county, and churches are numerous.

Average annual temperature is about 58°; annual rainfall is about 43 inches.

FAIRFAX

Was formed in 1742 from Prince William. It lies on the Potomac River, and adjoins Alexandria county. The county is watered by the Potomac and the Occoquan and their tributaries. Population, 16,655—males, 8,348; females, 8,310; white, 11,586; colored, 5,069. Number of acres of land, 259,362.

The surface is generally rolling and the soil is a sandy and clay loam, and in some parts very fertile.

The productions, already very large, are rapidly increasing, and consist principally of corn, wheat, oats, rye, hay, fruits, dairy products and vegetables. Its proximity to Washington city, Georgetown and Alexandria ensures a ready demand for all the productions of the farm, dairy and garden.

The land is mostly owned in small farms and is in a high state of cultivation.

The wheat crop of this county has also increased immensely. Where, a few years since, two threshers with horse-power did all the work, from farm to farm, there are now six steam-power threshers employed. Improved self-binder harvesters are in use.

The dairy business is conducted on an extensive scale. The production of milk for the supply of the cities of Washington and Georgetown amounts to over 2,000 gallons daily. There are several butter and cheese factories.

Bees, sheep and poultry are reported to be profitable.

LIVE STOCK.

	Number.	Value.
Horses and mules	4,408	\$229,870
Cattle	9,298	146,953
Sheep	2,885	11,026
Hogs	3,505	12,244

There are vineyards embracing over one hundred acres. This interest and general fruit culture are rapidly being developed.

By the census of 1880, Fairfax stands at the head of the list of counties in the value of orchard products.

Soapstone, asbestos, copper and iron are found in Fairfax. The Theodora copper mine is in this county.

Wild animals: Deer, wild-cat, raccoon, skunk, opossum, hare, fox, squirrel, musk-rat, mink, weasel and ground-hog.

Wild fowls: Turkey and pheasant.

Game birds: Partridge and woodcock.

Predatory birds: Owl, hawk, crow and buzzard.

Water fowls: Ducks and geese.

Field and forest birds: Flicker, jay, lark, robin, wren, sparrow, redbird, bluebird and swallow.

On the Potomac are many valuable fisheries, from which shad, herring and other fish are caught in great numbers.

The transportation facilities of this county are unsurpassed. It is traversed by three railways—the Alexandria and Fredericksburg, the Virginia Midland and the Washington, Ohio and Western; and the Potomac River, which bounds two of its sides, is navigable for large vessels as far as Washington.

County levy is 25 cents on the \$100 valuation of all real and personal property, including railroad, telegraph and telephone lines.

The Courthouse is situated near the centre of the county, and is a thriving village. It was nearly destroyed by the ravages of the late war, but has long since recovered from that disaster.

Mt. Vernon, the home of Washington, is situated in this county, on the banks of the Potomac River, eight miles below Alexandria. The grounds are in charge of the Mount Vernon Association, and are visited every year by thousands of persons from all parts of the world.

The number of public schools, 85—white, 60; colored, 25.

Many families from the Northern and Western States have settled in this county since the war.

FAUQUIER

Was formed in 1759 from Prince William. Its length is forty-five miles; mean breadth, sixteen miles. Number of acres of land, 413,697. The productions of this county furnish a large surplus for market. The population is 22,590; white, 14,686; colored, 7,904; males, 11,055; females, 11,545.

Fauquier is abundantly watered by the Rappahannock, Occoquan, and numerous creeks. The Rappahannock River forms its southern boundary and separates it from Culpeper and Rappahannock counties. The surface is gently rolling and in some parts hilly. The hill lands have a strong soil; the level lands are mainly gray sandstone.

The lands are fertile, especially the noted greenstone (*epidote*) lands, which constitute the richest part of this productive county. Here the nutritious blue-grass of Piedmont Virginia grows spontaneously, while cultivated grasses of every variety flourish luxuriantly, as do all the cereals, especially wheat and Indian corn; and fine crops of corn, wheat, oats, rye and grass are produced.

There are between forty and fifty grain mills in the county of Fauquier.

This is a large and wealthy county, and has among its farmers some of the most successful and prosperous in the State. The cereals and grasses, with horses, sheep and cattle, constitute the main products. Cattle fattened upon the blue-grass lands of Fauquier are in great request in the markets of Washington, Baltimore and the great cities further north, and have been largely shipped to Europe of late years.

LIVE STOCK.

	Number.	Value.
Horses and mules	8,059	\$396,578
Cattle	23,704	443,314
Sheep	13,064	35,164
Hogs	12,042	31,649

By the census of 1880 Fauquier headed the counties in the number of stock cattle.

Wild animals: Wild-cats, red and gray foxes, raccoons, opossums, skunks, ground-hogs, squirrels and hares.

Wild fowls: Turkeys and pheasants.

Game birds: Partridge and woodcock.

Predatory birds: Hawks, crows and buzzards.

Field and forest birds: Doves, larks, thrushes, robins, blackbirds, redbirds, bluebirds, catbirds, martins, swallows and sparrows.

The timber is oak, hickory, chestnut, walnut, poplar, locust, ash, cherry, cedar, sycamore, sassafras, elm, gum, mulberry, dogwood and pine. There are fifty saw-mills in this county making valuable lumber of the oak, walnut, pine, ash, cherry, poplar and hickory.

Fauquier has gold, iron ore, marble and asbestos. There are found in the county iron ores in the form of specular, limonite and pyrites; also copper pyrites. Limestone, as marble, is near the Plains station. This marble is very compact, close-grained, gray and white. There are several marble quarries; and gold is also mined in the southern part of the county; it is in the form of sulphurets. Barytes is mined in the county.

The Virginia Midland Railroad, the main stem, the Manassas branch, and the Warrenton branch, penetrating this beautiful and fertile county in various directions, give it excellent market facilities.

Warrenton is the chief town and county-seat, and is the centre of a refined and intelligent community. It has a population of more than 1,500, and has numerous churches and schools. Near by is the Warrenton White Sulphur Springs, a popular resort for pleasure and health.

Number of public schools, 121—white, 84; colored, 37.

Near Warrenton is Bethel Academy, a military school of high standing.

There are more than sixty churches in the county owned by six or seven denominations.

The *Bethel Cadet* is published at Bethel Academy (monthly); *True Index* and *Virginian* at Warrenton.

Fauquier ranks high as regards quality of soil, beauty of scenery, healthfulness and general prosperity. In its borders are thirteen railroad stations, a number of which are flourishing towns or villages.

Annual average temperature is 55°; rainfall, 42 inches.

County taxes: 50 cents capitation tax and 12 cents on the \$100 worth of real and personal property.

Fauquier is one of the healthiest and most prosperous counties in the State.

FLUVANNA

Lies on the north bank of James River, and on the western edge of the Middle Division. Albemarle bounds it on the west, Louisa on the north, Goochland on the east. The Rivanna River, flowing from Albemarle and Greene counties, enters Fluvanna near the northwest corner and falls into the James at the southeastern angle of the county, where the thriving town of Columbia is situated. Hardware River flows through the southwestern limits of the county, and Byrd Creek through the eastern. These large tributaries of the James and many smaller streams abundantly water the county, and greatly enhance its advantages.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,677	\$67,433
Cattle	3,795	34,805
Sheep	1,646	3,473
Hogs	2,765	4,769

Fluvanna contains 180,000 acres of land. Population, 9,508—male, 4,598; female, 4,918; white, 5,051; colored, 4,457.

Taxation by county levy is 60 cents on the \$100 value of real and personal property, and 10 cents on the same for county and district schools.

The productions of this county are those common to this part of the Middle Division—wheat, corn, oats, rye, grass and tobacco. For the last-named crop it has a special reputation, the “sun-cured” of Fluvanna having been renowned for several generations. The system of flue-curing has recently been introduced very successfully. This county, in addition to “Fluvanna sun-cured,” produces the finest “shipping” and “mahogany wrappers” found on the market. In proof of the excellence of its fillers for chewing tobacco several popular brands carry the name of the county.

This was formerly one of the best timbered counties in Virginia, and much good timber yet remains in some sections—pine, oak, poplar, ash, walnut, hickory, birch and cherry.

There are six saw-mills in the county, sawing mainly pine, oak and poplar.

Among the wild animals are deer, foxes, raccoons, opossums, squirrels and hares, and about the rivers musk-rats, otters and minks.

Water fowl: Wild geese and ducks, and in the forests and fields, wild turkeys, pheasants, partridges, larks, jays, robins, mocking-birds, etc.

The mineral wealth of this county is very considerable. The great gold belt passes through, and much gold has been taken from different mines. The "Telurium" is the oldest gold-mine in Virginia, and the ore of this and other mines is, in places, very rich.

Gold-mining in Virginia has been revived in the past two years along the belt, in which a large part of the county lies. Heretofore the great obstacle to successful gold-mining in this section was the difficulty of getting the gold out of the sulphurets in which it is found. Improved machinery and new methods are reported as overcoming these obstacles.

Iron ore, magnetic and brown hematite has been found, and good specimens of copper ore, in the neighborhood of Palmyra, the county-seat.

Slate, soapstone, talc and asbestos have been found, and very fine building stone is quarried and cut near Columbia.

Number of public schools, 53—white, 33; colored, 20.

The *Bulletin*, a weekly, is published at Palmyra.

The Richmond and Alleghany Railroad, passing through the southern border of Fluvanna, gives easy and quick communication with Richmond. To the central parts of the county the Rivanna canal and slackwater navigation in the Rivanna River afford facilities for shipping produce to Columbia, where it is taken by the railroad.

Palmyra, a thriving village, is the county-seat, and is about seven miles from Columbia, a busy town at the mouth of the Rivanna River, on the Chesapeake and Ohio Railroad.

Altogether, this region offers many attractions to settlers—cheap and productive lands, pleasant and salubrious climate, accessibility to market, and a moral, law-abiding population.

FLOYD

Was formed in 1831 from Montgomery. It is thirty-eight miles long, with a mean width of eighteen miles, and has 238,348 acres of land. Population, 14,405—males, 7,103; females, 7,302; white, 13,230; colored, 1,175.

It is surrounded by the counties of Patrick, Carroll, Pulaski, Montgomery and Franklin, and lies between two prominent ranges of the Blue Ridge mountains. The surface is rolling; the soil is fertile and well adapted to grain and grass. It is watered by Little River and its many branches. This is an elevated and healthy region, and possesses a delightful summer climate.

Floyd is the great buckwheat and flax county of the State. By the census of 1880 it stands at the head of the list for these crops. The Blue Ridge division, composed of the three counties of Floyd, Carroll and Grayson, produced one-fourth of the rye and one-fourth of the buckwheat, also one-fourth of the flax, produced in the State.

The general products are tobacco, wheat, corn, oats, hay. Spring wheat has recently been tried with very encouraging results. The finer grades of tobacco are raised here, and bring a considerable revenue to the county.

A writer makes this summary of the county: "The land of this county is principally rolling, but very little of it is too steep to be conveniently cultivated. There is a sufficiency of bottom land on the numerous streams to produce all the hay necessary for the present wants of the farmers, who winter all the stock they can graze, and if we had a railroad, could increase the hay product so as to have a considerable quantity to ship from the county. The lands are well adapted to the growth of all the grasses; clover does well, and red-top or herds' grass seems to come spontaneously, and makes the finest grazing we have. Meadows produce on an average about a ton and a half to the acre."

Fruit-raising is profitable. Grapes are successfully cultivated, and the wild varieties are found everywhere. Ives, Concord and Norton's Virginia are found to succeed.

Many fine horses, mules, cattle, sheep and hogs are raised in this county.

LIVE STOCK.

	Number.	Value.
Horses and mules.	2,641	\$88,871
Cattle	10,876	82,624
Sheep	6,707	6,702
Hogs.	5,291	5,235

The timber consists of white oak, red oak, black oak, chestnut oak, hickory, white ash, pine, walnut, dogwood, maple, blackgum and chestnut. About one-half of the area of the county is in original forest timber of the varieties named. Most of these woods are converted into lumber. There are forty saw-mills in the county.

Minerals are found in different localities—gold, iron, copper and ochre; also, a very fine quality of soapstone and asbestos, in large quantities. The copper ore is very valuable. The soapstone is valuable in the construction of furnaces for smelting operations. Iron pyrites, yielding 50 per cent. of sulphur, is abundant. The gold discoveries on Laurel Creek, in Floyd county, are proving valuable.

The establishment of soda, ash and bleach works at Saltville on a large scale will most probably bring the rich pyrite of this section to practical development for the production of sulphuric acid. There is undoubtedly great wealth hid in the strange bifurcation of the Blue Ridge, composing the counties of Floyd, Carroll and Grayson.

Wild animals: Bear, wild-cat, fox, raccoon, opossum, mink, squirrel, etc.

Wild fowl, etc.: Turkey, pheasant, partridge, snipe, redbird, lark, robin, mocking-bird and many smaller birds; also hawk, owl, raven and crow.

Its nearest railroad is the Norfolk and Western, passing through the adjoining counties of Montgomery and Pulaski. It is hoped that the Franklin and Pittsylvania Railroad will soon be extended into this county.

The county is well supplied with churches and public schools, and a good private school each for boys and girls at the court-house. The number of public schools, 99—white, 90; colored, 9.

Jacksonville, the county-seat, is a beautifully located town of five hundred inhabitants, has four good churches, three hotels and six stores, all of which have a good trade from this and a portion of Franklin and Patrick counties.

Monthly average temperature, 53°; rainfall about 42 inches.

Taxation for county purposes: Capitation tax, 50 cents; county levy, 70 cents on \$100 of value of real and personal property; county schools, 10 cents; district schools, 24—average in six districts.

FRANKLIN

Was formed in 1784 from Henry and Bedford. It is thirty miles long and about twenty miles wide. The Roanoke (there called "Staunton") River runs on its northeast border, and the county is intersected by Pigg and Blackwater rivers and their numerous tributaries. The surface is rolling, as in the Piedmont counties generally. Franklin contains 453,200 acres. Population, 24,985—males, 12,294; females, 12,691; white, 18,737; colored, 6,248.

This is one of the most productive Piedmont counties. Nearly all the land-holders are tobacco-planters, producing all varieties and of excellent quality. The soil is fertile, producing also corn, wheat, oats, rye, buckwheat and all the grasses.

This county, like the rest of Piedmont, is an excellent fruit region, particularly adapted to apples and grapes; and it is also a good grass and stock-raising county. The following is its live-stock record:

	Number.	Value.
Horses and mules	4,912	\$117,802
Cattle	11,318	84,139
Sheep	5,542	5,990
Hogs.	7,316	9,109

This is a fine poultry section.

The wild animals are: Deer, bears, foxes, raccoons, hares, squirrels and minks.

Wild fowl: Turkeys, pheasants, partridges, pigeons and larks.

The minerals are: Iron, limestone, mica, asbestos, granite, soapstone and allanite. These minerals have been to some extent developed along the line of the Franklin and Pittsylvania Railway from Elba, in Pittsylvania county, to Rocky Mount, the county-seat of Franklin. A branch of the Norfolk and Western from Roanoke City to Winston, N. C., passes through this county, and has given additional impetus to the development of the mineral and timber resources of the county as well as furnishing increased facilities for transportation and travel.

This county has an abundance of all the Piedmont timbers. A large number of steam saw-mills are turning this timber to profitable account.

Number of public schools, 147—white, 118; colored, 29. There are several excellent private schools in the county.

There are between thirty and forty churches, occupied by seven different denominations.

FREDERICK

Was formed in 1738 from Orange. It is twenty-five miles long and about eighteen miles wide. It is the northernmost county of Virginia since the partition of the State, and one of the finest of the famed Valley of Virginia, and is noted both for its fine lands and good farming. Number of acres of land, 278,169. Population, including Winchester, 17,880—males, 8,594; females, 9,286; white, 15,852; colored, 2,228.

The surface is undulating and the soil very productive. The eastern portion has a belt of gray slate land from two to six miles wide, and running the entire length of the county on the line of Clarke.

The limestone belt, which is four to eight miles wide, is one of the finest and most productive sections in the State.

West of this valley is the "Little North Mountain"; between it and the "Big North Mountain" is a valley about six miles wide of limestone land. In this valley are some valuable lands and fine farms.

The chief productions of this county are wheat, corn, rye, buckwheat, oats and the grasses. Fruits succeed well, the apple particularly. Near Winchester is a section of land producing apples that have attracted public attention by their size, beauty and flavor.

West of North Mountain the land is generally a gray slate formation, which produces well.

Some of the finest live stock in the State are in this county.

LIVE STOCK.

	Number.	Value.
Horses and mules	5,740	\$265,782
Cattle	9,346	103,810
Sheep	9,012	24,709
Hogs	6,377	13,198

The timber in the limestone belt consists of finely-grown trees of oak, hickory, walnut, ash, locust and elm, and pine on the slate lands.

The wild animals found in this county are deer, wild-cats, red and gray foxes, minks, weasels, musk-rats, ground-hogs, raccoons, opossums, squirrels and hares.

The wild fowls are turkeys, pheasants, partridges, woodcocks and pigeons. The birds are robins, larks, jays, flickers, doves, martins, owls, crows, ravens and buzzards, and many small singing birds.

Ducks, geese and pigeons are migratory; martins and swallows are also migratory.

In this county are some of the best lands of the Shenandoah Valley. Soil, climate and air combine to make this one of the richest and healthiest regions in the world, and it abounds in clear streams and copious springs. One of these springs, just outside the city limits, gives to Winchester an abundant supply of the purest water.

Taxation for county purposes is only 12 cents on the \$100 value of real and personal property.

In the North Mountain are extensive deposits of iron ore of good quality, which has been successfully worked by several furnaces. Coal of anthracite character is also found.

Travertine marl exists in the limestone valleys. With the valuable clays found in the same locality a desirable cement might be made.

Rock Enon Springs, on the west of North Mountain, and Jordan White Sulphur Springs, five miles from Winchester, have an extended reputation for the virtue of their waters, and are liberally patronized. The water of the Jordan Springs is very much like that of the Greenbrier White Sulphur, and it is used in the same class of diseases.

The Valley branch of the Baltimore and Ohio Railroad runs through the county, and is a great through route for travel and traffic from the east and

northeast to the south and southwest. The Washington and Ohio Railroad, when extended, will cross this county *via* Winchester from east to west.

The Cumberland Valley Railroad extends from Pennsylvania to Winchester and affords excellent facilities for trade and travel northward.

Winchester is the largest town, and has a population of nearly 6,000. There are several smaller towns, beautifully located on the banks of the streams which flow from the adjacent hills and mountains. Middletown received considerable advance in the last few years, and is a prospective manufacturing town. (See "Cities.")

The number of public schools, 89—white, 82; colored, 7.

Frederick county has long been noted for its excellent female schools and educational facilities. The following description was given of the county in 1885 for the Hand-Book of that year, and there is no reason to believe that it has lost any of its advantages or its enterprise: "Within the county of Frederick, and at an average distance of eight miles from Winchester, are thirty-seven flour mills, the largest of which is the Baker Steam Mill, which has a capacity of one hundred and seventy-five barrels of flour per day. There are seven woollen mills, eight tanneries, one steam paper mill, one bone-dust and fertilizer factory, one sumac and bark mill, two iron foundries, a shoe factory, six glove factories—the largest of which works from two hundred to three hundred hands; ten cigar factories, working from five to forty hands each; three box factories, three carriage factories, one wheat-fan factory, several cabinet factories, one agricultural implement factory, several saw and planing mills, and quite a number of minor operations of various kinds. The county has no public debt, and its parish farm is about self-supporting. It has two banks—the Shenandoah Valley National, capital \$100,000, surplus \$60,000; and the Union (State), capital \$50,000. There are three excellent female seminaries—Episcopal, Methodist and Presbyterian—and one male academy, located in Winchester, and a flourishing Normal School in Middletown. The new public school-building in Winchester is an ornament and credit to the city. The National and Stonewall Cemeteries are within the corporate limits of Winchester. Three weekly newspapers and one monthly literary paper are published within the county." (See "Cities.")

The *Echo*, a weekly newspaper, is published at Middletown.

GREENESVILLE

Was formed in 1780 from Brunswick. It lies on the North Carolina line, and is one of the cotton and peanut producing counties. Area, 186,728 acres. Population, 8,230—male, 4,069; female, 4,161; white, 2,919; colored, 5,811.

The surface is level or gently rolling; the soil mostly a sandy loam, easily tilled and freely responding to ameliorating culture. The Nottoway River, on its north line, and Meherrin, which flows through its central parts, with their numerous affluents, drain its surface and furnish ample water-power and abundant supplies of fish.

There are ten grain mills in the county.

The productions are varied and valuable, and include tobacco, corn, wheat, oats, cotton and peanuts. There are some stiff clay soils well suited to wheat. Lands are cheap, and the people kind and hospitable. The climate and health are all that could be desired.

Wild animals: Deer, foxes, raccoons, opossums, squirrels and hares.

In the streams: Beavers, otters, musk-rats and minks.

Wild fowl, etc.: Turkeys, pheasants, partridges, woodcocks, mocking-birds, robins and many others. On the streams are geese, ducks, etc.

The timber of this county is abundant and very valuable, and consists mainly of white oak, ash and pine. There is a tram-road, nine miles long, on which steam-cars are run, leading from the Petersburg Railroad to a very fine body of white oak timber.

Marl is found in this county, and is abundant and convenient, and is very valuable in the production of peanuts, one of the staples of the county.

The transportation facilities are very good, and are furnished by the Petersburg and Atlantic and Danville Railroads, which traverse the county, and by the Seaboard and Roanoke, which is near its southeast corner.

In 1886 a gentleman wrote as follows to the Department: "I live in the northern part of the county and own a clay farm on the banks of Nottoway River. When I purchased here I was repeatedly told that I had settled on the poorest farm in the county. Now the luxuriant growth of all my crops will prove the contrary to any one who will take the trouble to see them. I keep about one hundred sheep, twelve cows, three horses and some ten head of young cattle. I harvested fifty-eight bushels of fall wheat from two and one-eighth acres of land, and am now putting into a silo from this same land at the rate of at least seven tons of green-corn fodder per acre. By the way, let me say I think this ensilage business is a great Godsend to Southside Virginia. English grasses do not take well to our uplands, but we certainly can grow rye and corn fodder and millet in enormous quantities, and the expense to us poor farmers need not be very great.

"I am more and more convinced that it does not pay our farmers to raise cotton. The uncultivated fields grow up in briars and sassafras for the want of sheep and other stock to browse them down. I think if the farmers generally would keep stock, cattle-buyers from the big markets would come here. A few years since I was in Washington, and happened to room with a cattle-buyer. He said to me: 'I go beyond you into the valleys of Virginia, into Tennessee and Kentucky; I would much rather come to you, but I could not fill a car in a whole week; I must go where I can fill a car in twenty-four hours.'

"Such a land for grapes and all small fruits, such pure water and pure air, is not often found beneath the sun."

LIVE STOCK.

	Number.	Value.
Horses and mules	1,071	\$62,940
Cattle	3,631	24,273
Sheep	488	817
Goats	43	32
Hogs	4,014	5,594

County taxes: County expenses, 50 cents on the \$100 worth of real and personal property; county schools, 2 cents on the \$100 worth of real and personal property; district schools, ten cents on the \$100 worth of real and personal property.

Number of public schools, 37—white, 18; colored, 19.

There are over twelve churches in the county, mainly belonging to two denominations.

Average annual temperature, 58°; annual rainfall, 44 inches.

GRAYSON

Was formed in 1792 from Wythe. It borders on the North Carolina line, and is bounded by Smyth, Wythe and Carroll. The western portion is mountainous, but its eastern and central parts lie in a fertile valley, and comprise a fine farming section. It contains 281,086 acres of land. Population, 14,394—male, 7,083; female, 7,311; white, 13,473; colored, 921.

The productions are corn, wheat, oats, etc. This is a good grass region, and raises a great number of cattle, horses, sheep, etc. There are sixty grain mills in the county.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,566	\$80,777
Cattle	11,079	68,951
Sheep	10,148	9,561
Hogs	6,056	4,779

Fruit-raising is interesting and profitable. This is one of the finest fruit counties in the State, producing the very finest apples, peaches and grapes.

Bees and poultry thrive well.

Timber is abundant, consisting principally of white and yellow pine, white oak, red oak, chestnut oak, some walnut and cherry, chestnut, hickory, maple, etc. There are twelve saw-mills, and the merchantable lumber is oak, poplar and the pines.

This county has valuable mineral resources; copper (very rich), iron, mica, granite, asbestos and steatite are found here. An iron ore of peculiar character is found in Grayson and Wythe, yielding, it is said, in some cases, by usual smelting process, a metal having all the qualities of steel. There are also large deposits of ores of the same character as the celebrated Cranberry ores of North Carolina. Unfortunately none of these ores are worked, the county having no railroads.

The climate is pleasant and healthy, and the natural advantages of this section are very great. It lacks railroad facilities, the nearest road being the Norfolk and Western, passing through the adjoining county of Smyth.

The one great need of this county is a railroad, and it will be as great a boon to other parts of the State as to the county. Two or three lines of railroad have been chartered through this county, and it is confidently believed that some one of them will be built in the near future.

The following wild animals are found: Bears, wild-cats, deer, foxes, raccoons, opossums, squirrels and hares.

Among the feathered tribe are turkeys, ducks, pheasants, partridges, crows, jays, robins, bluebirds, etc.

One or two forges partially supply the home demand for iron, and recently one or two woollen mills have been erected.

Several High schools, as well as the public school system, are in a prosperous condition. New framed school-houses are rapidly taking the place of the less comfortable ones heretofore used.

Number of public schools, 86—white, 81; colored, 5.

Newspapers: *The Gazette* and *Journal* (weekly), published at Independence.

Grayson is becoming noted for the number of neat white churches which dot its hills and valleys.

Average annual temperature about 53°; rainfall about 43 inches.

County taxes, 50 cents, and road tax, 20 cents, making 70 cents on the \$100 value of land and property.

GOOCHLAND

Was formed in 1727 from Henrico. It is thirty miles long and about ten miles wide. It lies on the north bank of the James River, in its entire length. The surface is undulating. Area, 178,804 acres. The population is 9,958—males, 4,893; females, 5,065; white, 7,083; colored, 5,875.

The soil is a gray or chocolate loam, resting on a tenacious red-clay subsoil, and is noted for its large and excellent crops of wheat. Ten grain mills are in this county.

The soil on the rivers and creeks is very rich; on the ridges not so good, but is easily improved and then very productive. It produces large crops of tobacco, corn, wheat, oats and hay. As fine timothy meadows can be shown as are in the United States. And now that this is a well-established fact the area seeded in grass is fast increasing, and improved stock being introduced.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,498	\$80,280
Cattle	3,295	43,815
Sheep	1,073	2,700
Hogs	1,858	5,265

In 1892 Goochland reported poultry particularly healthy and profitable.

Attention is being paid to the culture of the vine, to which much of the land is admirably adapted.

Report for 1892: "Grapes, an enormous yield; all wild fruits good; standard fruits, half crop."

In this county are found gold, iron ore, copper and coal. There were seven gold mines and two coal mines in the county in 1885. Some of these are now at work and a new impetus has been given to this work. A fine mica mine is being worked near Irwin Station, and in the lower end of the county, on the railroad, petroleum or naptha has been found, and considerable quantities of "mountain-tallow" exhibited. The indications are that this oil is in considerable quantities. Besides gold, iron and coal, several other minerals are found here, as granite, plumbago and asbestos. The county-seat, near the centre of the county, is thirty miles from Richmond, and is a thriving little village.

The number of public schools, 59—white, 35; colored, 24. Twenty church buildings are occupied by five or six denominations.

Average temperature for 1892, 56°; rainfall about 42 inches.

Good land can be bought for \$12 per acre; on the ridges, from \$2 to \$5. The Richmond and Alleghany Railroad, running through its length, forty-two miles by the windings of James River, furnishes transportation for the farm products. The health of the county is excellent. It is drained by several large and many small creeks, which empty into the James.

Rate of county tax: 40 cents on the \$100 valuation of property for county purposes; county school tax, 10 cents; district schools, 10 cents; making 60 cents for all county taxes.

Many Northern men have purchased lands and settled in this county, and are well pleased with it.

GREENE

Lies northeast of Albemarle; its northwest boundary, the crest of the Blue Ridge, which separates it from Rockingham, in the Shenandoah Valley. Population, 5,622—males, 2,746; females, 2,876; white, 4,114; colored, 1,508. It contains 107,016 acres; about 42 per cent. of this is woodland.

Much of the surface is mountainous or semi-mountainous, but the less broken portions are fertile. It is watered by the Rapidan River and its tributaries and the head-waters of the Rivanna River.

There are eighteen grain mills in this county. Stock, especially sheep, are profitably raised in this county.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,478	\$50,487
Cattle	2,384	22,490
Sheep	1,855	2,170
Hogs	2,804	5,205

Timber is abundant, consisting of pine, oak, hickory, chestnut, walnut and poplar. There are seven saw-mills; the merchantable lumber is mainly oak and pine.

The minerals found are copper and iron ore. Having no railroad for transportation of its products, these ores are not developed as they might be. The Virginia Midland Railroad runs within a few miles of the eastern border of the county.

Stanardsville is the county-seat—a small village. With cheap lands and a healthful and pleasant climate, Greene county offers good inducements to settlers from other parts of the country. Good farms with improvements can now be bought for \$15 per acre, and unimproved lands \$1.50 to \$8 per acre, but will rapidly rise in price when penetrated by a railroad. Mountain lands are sold at ten cents to \$2.50 per acre.

The weather service at this town reports monthly average temperature for year ending November 30, 1892, 55.6°; total annual rainfall for same period, 42.20 inches; average monthly, 3.52 inches.

County taxes at the rate of 40 cents on the \$100 value of property.

Number of public schools, 31—white, 24; colored, 7.

There are over twelve churches in the county, belonging to four or five denominations.

GLOUCESTER

Was formed in 1661 from York. It is twenty-seven miles long and about eight miles wide, and contains 135,345 acres. Population, 11,653—males, 5,969; females, 5,688; white, 5,437; colored, 6,216.

It lies between Mobjack Bay and York, and is watered by Ware, Severn and North rivers and by numerous creeks. Piankatank River forms part of its northeast boundary. These streams give very extensive tidal waters, mostly navigable for large vessels, and filled with fish and oysters of the finest quality.

The climate, owing to the presence of so many large bodies of salt water and the nearness of the ocean, is very mild in winter—snows rarely attaining sufficient depth or remaining long enough for sleighing; and the summer's heat is tempered by the sea breeze, which blows nearly every day. In the low

grounds an abundance of good well water is procured at from six to twenty-five feet below the surface, while in the higher parts delicious springs bubble from the foot of every hill.

No point in the county is very far from deep water. Bordering upon the rivers the land is low and alluvial, and, where properly managed, very productive. Running back of this the lands become higher, the soil of clay or sandy loam, with numerous rich flats along the many streams which flow through the upper portions of the county. Marl is found everywhere, underlying the lands of the low grounds at from two to eight feet below the surface, and cropping out of every hillside among the highlands. Gloucester was, before the war, one of the large wheat-growing counties of Tidewater. All the grains flourish here—corn, wheat, rye, oats and barley. The grasses, where proper attention is paid to them, grow to perfection. The attention of many of the people in the lower end of the county is being turned to trucking, to which the soil and climate prove admirably adapted. Tobacco does well, and where grown by those who understand its management, is profitable. Peanuts also have been profitably grown. As to fruits, few parts of eastern Virginia produce them to greater perfection.

In fact, there is nothing proper to a temperate clime, whether of grass, fruit, vegetable or other staple crop, that cannot be here grown to perfection, with proper care and attention. The yield varies—corn from 15 to 75 bushels per acre, wheat from 6 to 30, oats from 15 to 60, English peas from 18 to 60 barrels per acre, potatoes from 20 to 90 barrels, etc.

There are eleven grain mills in the county, two tanning and leather works.

Farmers are learning to concentrate their efforts, and dispense as far as practicable with outside labor, relying more upon what they themselves can accomplish with the aid of improved implements and methods. More land is being seeded to grass and more attention paid to stock.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,115	\$90,822
Cattle	4,790	89,644
Sheep	2,584	5,061
Hogs	3,619	5,494

Much land is on the market, with good improvements, and can be had at prices greatly reduced from *ante-bellum* valuations. Some of the finest estates in Virginia are in this county, and it was noted for wealth and refinement before the war.

The culture of fruit is rapidly increasing. Among the large fruits, pears prove the most profitable, and strawberries among the small. Grapes are beginning to be grown for market, and are paying well.

The county is, as a whole, healthy, the salubrity of the lower portions being unsurpassed. The lands are cheap.

Owing to her great extent of water front, Gloucester is more largely engaged in planting oysters than probably any of the counties; a very large proportion of her people are deriving a livelihood almost entirely from the water. Vast quantities of fish are taken in pound-nets and other devices, and shipped to the Northern markets or converted into oil and fertilizers.

Considerable amounts of sawed lumber (oak, pine, etc.), cord-wood and railroad ties are exported. Not more than one-fourth to one-third of the lands are cultivated—the remainder in forests and young timber.

There are five saw-mills in this county.

Wild animals of this county are deer, foxes, raccoons, opossums, squirrels and hares.

In the waters, otters, musk-rats, minks, wild geese, ducks and all water fowls abound; turkeys, partridges, larks, robins, blackbirds, in the fields; sora, woodcocks, snipes, etc., in the marshes.

The roads are excellent in the low grounds, and in the highlands are not so good, but being improved.

Steamers to Baltimore and Richmond stop daily at the various wharves on the York River, while the country on Mobjack Bay has a tri-weekly steamer to Norfolk, which connects at Old Point with steamers to Philadelphia, New York, Boston and Providence, and new wharves are projected with daily steamers to Norfolk and Cape Charles City. A steamer also runs several times a week from the Piankatank to Baltimore. This, together with numerous sail vessels, provide cheap and sufficient transport for the various products of the lands and waters. A daily mail reaches every neighborhood.

Tax for county purposes, not including schools, is 20 cents on \$100 value of property.

Good schools in good school-houses, public and private, exist in every neighborhood. Number public schools, 52; white, 25; colored, 27.

Churches of the various denominations—Episcopal, Baptist, Methodist and Presbyterian—are placed at convenient distances over the whole county.

GILES

Was formed in 1806 from Montgomery, Tazewell and Monroe, and is now one of the frontier counties of the State, adjoining Mercer and Monroe counties of West Virginia. The eastern and western portions of the county are mountainous, both the boundaries being formed by ranges of the Alleghany Mountains, and is watered by New River and its tributaries. Number of acres of land, 240,347. The population is 9,000—male, 4,577; female, 4,513; white, 8,253; colored, 837. Some portions of the county are very fertile, producing fine crops of cereals and grasses. The county is a fine grazing region, and produces some of the finest fat cattle that are sent to the Eastern markets.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,580	\$99,876
Cattle	6,143	60,169
Sheep	9,261	16,302
Hogs	2,518	3,582

It abounds in fine growths of the usual timber of this region—walnut, wild cherry, sugar and other maple, oak, etc. There are several mineral springs in this county, and vast beds of iron ores, copper and coal.

In Giles there is found red marble, near Chapman's Ferry and near the base of Angel's Rest Mountain. Hydraulic limestone, near Chapman's Ferry, contains 43 per cent. of carbonate lime and about 35 per cent. of carbonate magnesia.

The mineral springs—the most noted places of popular resort during the heated term—are the New River White and Hunter's Alum.

That wonderful freak of nature, the so-called "Salt Pond," on the mountain of that name, attracts many visitors.

The branch road of the Norfolk and Western Railroad from Central Station, on the borders of Montgomery and Pulaski, passes nearly due north through the northeast end of Pulaski, and through the centre of Giles to the West Virginia line, and through Mercer county, West Virginia, in a southwest course to Graham and Pocahontas, in Tazewell, and is extended into the central parts of the last county, where it will tap one of the finest mineral and timber regions in the world.

The number of public schools, 60—white, 54; colored, 6.

There is one weekly newspaper, which is published at Pearisburg—*The Virginian*.

HALIFAX

Was formed in 1752 from Lunenburg. It is one of the largest and wealthiest counties in the State. It borders on the North Carolina line, with Pittsylvania on the west and Mecklenburg on the east. It lies in the heart of the finest tobacco-growing section of the State, and its production of tobacco, wheat, corn and oats aggregates a very large amount. This county is remarkably well watered, the Staunton River skirting its entire northern and northwestern boundaries, with numerous tributaries penetrating the county, while the Dan, Hyco and Banister rivers penetrate the interior. The soil on these streams is of great fertility, producing large crops of grain year after year without rest or fertilizer. Much wealth and refinement exist here, though the wealthiest families lost heavily by the late war, as they did in all parts of the State; but this county was very largely slave-holding. The population is 34,324—male, 16,793; female, 17,631; white, 15,008; colored, 19,416. Acres of land, 516,961.

The following description, prepared by an intelligent gentleman in 1885, with some little alteration, is applicable now:

"Planting, that is, the cultivation of tobacco, is the chief industry of the county, not because our lands are not adapted to the grain crops, but because the cultivation of tobacco has been far more remunerative than that of other crops. The lands upon our principal streams, including Birch Creek, Hyco and other streams, are as finely adapted to corn, wheat, clover and other cereals as those of the Valley or any other section of the State.

"A very large proportion of the ridge lands of the county is of a free, soft, gray sandy character, unsurpassed by any in the world for the growth of fine tobacco. Of such fine texture, silkiness, brightness and richness of color is the article sometimes grown here as to bring upon the market more than a dollar a pound, and whole crops have been sold at the barn-door at an average of forty cents, and sometimes even more. What makes this county peculiarly attractive is the fact that while its grain lands compare favorably in fertility with those of any other section of the State, its poorest lands, such as have just been described, are its most valuable, selling sometimes as high as thirty and thirty-five dollars per acre. In fact, until the recent universal depression in trade, there was a considerable boom in the price of lands all over the county—in some instances bringing double what they sold for six or seven years ago. While this upward tendency in prices has been checked, we still believe, with

one or two more good crops, we will reach a degree of prosperity which has not been experienced since the war."

While the prices of "brights" are not as high as heretofore, yet the fertilizers necessary to their production are cheaper and their value more certain; and while the lands are lower in price than then, the people are generally out of debt and are making much better diversifications of crops, and have added to the number and improved the character of domestic animals.

While not generally regarded as strictly a grass country, all the grasses do well on good land. Sheep-raising is largely carried on with very handsome profit.

LIVE STOCK.

	Number.	Value.
Horses and mules	4,545	\$231,474
Cattle	7,804	59,716
Sheep	1,023	4,174
Goats	85	101
Hogs	7,887	15,764

South of Dan, in Halifax, might be made a paradise for wool-growers; large areas of uncultivated land for sale at low figures; mild, sunny winters, requiring little food or shelter (thanks to the old-field pine); dry, rolling lands, but not steep.

Along the line of the railroad, Sutherlin, News Ferry, South Boston, Scottsburg and Clover are enterprising business places. South Boston particularly has flourished beyond the expectation of its most sanguine friends. Black walnut, Brooklyn and Republican Grove, somewhat remote from the railroad, exhibit evidences of prosperity. Halifax before the war was one of the largest slave-holding counties of the State. (For description of South Boston, see "Towns" in this book.) The marketing and manufacture of tobacco and trading with the planters is the basis of the growth and prosperity of these little towns and villages.

Iron, copper, plumbago, manganese and mica are found in the county; and valuable lithia water is found at Wolf Trap, on the Richmond and Danville road, and exported to all parts of the country.

In 1886 a correspondent wrote: "The health of the people is as good as that of any of the Piedmont counties, the doctor rarely being able to acquire more than a scanty subsistence where he depends upon his profession alone. The industry of the people is unsurpassed; constant attention to their own affairs renders them but little disposed to gossip or meddle with the affairs of others."

The following wild animals are found in the county: Deer, red and gray fox, raccoon, woodchuck, opossum, squirrel and hare in the woods and fields; in the rivers, beaver, otter, musk-rat and mink.

The wild fowls are: Turkey, pheasant, duck, woodcock, partridge and snipe for game, and the catbird, mocking-bird, redbird, bluebird, jay, blackbird, dove, lark, etc. The snowbird, jay and martin, once numerous, are now very scarce.

The Richmond and Danville Railroad traverses this county from northeast to southwest, by which route the county-seat is 115 miles distant from Richmond.

The town of South Boston, on the Richmond and Danville road, at one of the points where this road touches the Dan River, is rapidly growing in importance as a tobacco centre—building up a flourishing trade.

The Lynchburg and Durham Railroad traverses the county from north to south, and the Atlantic and Danville Railroad traverses the southern portion. Halifax voted a subscription of \$150,000 to the Lynchburg and Durham Railroad, and the same amount to the extension of the Atlantic and Danville road from Hicksford to Danville, and has secured admirable transportation facilities, and all that is needed in this line is some system by which the county roads could be properly located and kept in good condition.

Public schools, 136—white, 81; colored, 45.

Churches of all denominations are abundant.

Mossingford, a weather station in the adjoining county, and same latitude, makes the annual average temperature about 57°, and the rainfall at 29.70 inches; this was a very dry year in that locality. The usual rainfall is about 44 inches.

HANOVER

Was formed in 1720 from New Kent. The population is 17,402—male, 8,747; female, 8,658; white, 9,188; colored, 8,214. There are 292,569 acres of land. It lies between the Pamunkey and Chickahominy rivers. The northeast line is formed by the North Anna and Pamunkey, the latter stream being formed near the centre of that line by the junction of the South Anna with the North Anna. The central parts are well drained by tributaries of these main streams. Like Caroline, this county is partly in the archaean and partly in the tertiary formation, the line between the two, dividing it into two sections nearly equal in area. The Richmond, Fredericksburg and Potomac Railroad follows this line very nearly along its whole course in crossing the two counties.

The surface in the eastern part is generally level, and the soil a light sandy loam, well suited to trucking. The sweet potato here attains its greatest perfection, and the melons of Hanover are unsurpassed. In the central and western portions the surface is more rolling, and the lands suited to the culture of tobacco, the cereals and grasses.

Hanover, at the late Exposition in Richmond, took a high position for its agricultural products, receiving a number of county premiums; also a certificate for a collection of fine wines. A farmer near Ashland made last year twenty-nine bushels wheat and fifty bushels winter oats per acre. The crop was top-dressed with tobacco stems.

LIVE STOCK.

	Number.	Value.
Horses and mules	8,481	\$178,312
Cattle	5,366	64,074
Sheep	1,604	3,926
Goats	25	28
Hogs	4,427	10,973

There are many fine blooded horses and cattle in this county.

On the Pamunkey are some fine wheat lands.

There are many fine estates, and the farmers are intelligent, judicious and industrious. The farm products aggregate a large bulk and value, and bring into the county large sums of money.

A considerable number of farmers make dairying and poultry-raising a prominent and successful part of their occupation. The upper end of the county is a very fine tobacco section, and many fine crops are produced.

Game is abundant. Wild turkeys, pheasants, woodcocks, snipes, partridges and wild ducks abound. All the birds of the forest and field are here. Occasionally deer are seen. Foxes, raccoons, opossums, woodchucks, squirrels, hares, otters, minks, musk-rats are plentiful.

Marls of several sorts, both miocene and eocene, with green sand of the richest quality, are found here, and have been very profitably used on the lands.

Recent discoveries of deposits of phosphate of lime have been made on the Pamunkey River.

Very large quantities of lumber, cross-ties and cord-wood are marketed every year from the county.

Mica, feldspar, asbestos and gneiss are found in the western half of the county.

A deposit of the finest mica and a quarry of red granite, of excellent quality, are being developed near Verdon station, on the Chesapeake and Ohio Railroad.

This is a fine county for immigrants with small capital and industrious habits. The trucking and canning business can be, and is, made very profitable here by persons familiar with gardening. The county is full of delicious wild berries, and all of the cultivated berries do remarkably well, and there are several large canneries for fruits and vegetables; a large fertilizer factory and several saw-mills.

Taxation: Whole tax, State and county, 1 per cent. Tax for all county purposes, 50 cents on the \$100 worth of property; State tax same.

The railroad facilities of the county are excellent. Besides the Richmond, Fredericksburg and Potomac Railroad passing through from north to south, the Chesapeake and Ohio intersects it in a north and northwest direction, having a course of nearly forty miles in Hanover, and the Richmond and York River Railroad skirts its southeast corner.

The accommodation trains of the Richmond, Fredericksburg and Potomac running daily between Fredericksburg and Richmond, and twice a day between Ashland and Richmond, give great facilities to the citizens of these growing towns. There is also an accommodation train of the Chesapeake and Ohio Railroad between the Junction and Richmond running daily.

Number of public schools, 83—white, 48; colored, 35. The graded school in Ashland has four teachers and gives great satisfaction. Randolph-Macon College, under the patronage of the Virginia and Baltimore Conferences of the Methodist Church South, is located at Ashland, and the Baptist Female Institute is at Gwathmey's station.

Newspapers: *Enterprise* (weekly) and *Randolph-Macon Monthly*, Ashland.

Ashland, a town of fifteen hundred to two thousand inhabitants, is the educational centre of the section. While mainly a residential town, with many fine homes, it has a fine trade and extensive business operations. The Ashland *Enterprise*, a valuable weekly newspaper, is published here. The weather station located here gives the monthly average temperature of the county for 1892 at 56°; rainfall, annual, 42.48 inches; monthly, 3.54 inches.

HENRICO

Was one of the original shires into which Virginia was divided in 1634. Its length is twenty-seven miles; mean breadth about eight miles. The surface is undulating; soil on the rivers very productive. It is drained on the south line by James River, and on the north by the Chickahominy, and by their tributa-

ries. It produces largely of corn, wheat, oats, trucks, and some tobacco. The population, including Richmond, is 103,394—males, 49,340; females, 54,054; white, 50,775; colored, 43,619. Number of acres of land, 161,816.

Having the large city of Richmond, with a population of 81,388, near the centre of its south border, and four railroads passing through this county, the products of the farm have quick, ready sale and small cost of carriage. Its productions are large and varied, and the profits of farming as good as in any part of the country. Grass succeeds well. There are several large nurseries and many large orchards and vineyards in the county; and dairy farming is extensively carried on.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,779	\$170,737
Cattle	4,484	87,282
Sheep	381	1,042
Goats.	42	247
Hogs	2,013	8,524

The planting of vineyards is going on rapidly, as experience has shown that this county is admirably adapted to grape-growing. The Norton, the best of American wine grapes, except the Cynthiana, which is of the same family, originated just outside of Richmond, and almost all the native grapes do well here. A few years will probably see Richmond the centre of a great wine-making district.

Large quantities of table grapes from the vineyards of the county are annually marketed in Richmond.

Granite in great abundance, potter's clay and coal exist in Henrico. "Natural" coke of excellent quality is largely mined in the upper part of the county. Fine marls are found in different parts of the county. Good green-sand near Malvern Hill has been developed, and the best shell-marls are found on the Chickahominy and White Oak swamp, one deposit analyzing 85 per cent. carbonate of lime. Valuable brick-clay is found in different locations along the James River, and large quantities of building brick are manufactured.

The James River division of the Chesapeake and Ohio Railway runs along the southern border of this county, and the Chesapeake and Ohio, the Richmond, Fredericksburg and Potomac, and Richmond, York River and Chesapeake, and the projected Richmond and Chesapeake railroads pass through the county. The Belt line from the Richmond, Fredericksburg and Potomac, crossing James River above the city, connects with the Richmond and Petersburg beyond Manchester. The Seven Pines Railroad, from Richmond to the National Cemetery, affords accommodation for nine miles through a thickly-populated and improving section. Many of the public roads have been greatly improved and are being improved.

Richmond, the capital and the largest city in the State, is situated in this county, on the north bank of James River, at the head of tide-water. It has extensive wharves and docks, with a depth of eighteen feet of water over the bar, to be increased to twenty-four feet. It has extensive commerce and trade and large manufacturing establishments of every kind. It is the chief market of the State. (For full description see "Cities.")

The largest and finest dairies in the State are located around this city. R. B. Chaffin, about three miles below the city, carries two hundred and fifty cows,

and his large dairy is equipped with all the modern appliances and improvements for testing milk and making butter. There are a number of smaller dairy farms that do a large and successful business. These have greatly improved the lands of the county and increased the production of grass, hay and ensilage. There are several large poultry farms near the city, which is an excellent poultry market. Market-gardening and trucking are rapidly increasing, keeping pace with the increased growth and increasing consumption of the city of Richmond. Improved stock of all kinds are to be found in this county. In addition to the improvement in cattle by dairy-farming and the introduction of blooded cattle, there are several stock-farms for the rearing of blooded horses of different breeds, and attention has been lately given to the improvement of sheep for mutton and spring lambs.

Henrico county, surrounding as it does the city of Richmond, which is reached from every direction by railroads and traversed by street cars, enjoys exceptional educational advantages. The colleges, private institutions, and splendid public school system of Richmond and the admirable public schools of the county afford every facility for acquiring an education. Number of public schools, 71—white, 41; colored, 30.

Churches of all denominations are scattered over the county.

Farming lands in the county vary in price from \$5 to \$200 per acre, according to improvements and location.

Taxation for all county purposes, 45 cents on the \$100 valuation of real and personal property, being fixed at 90 per cent. on State tax and valuation.

HENRY

Was formed from Pittsylvania in 1776. It is nearly a square of eighteen miles, and contains 368,799 acres. Population 18,208—males, 9,069; females, 9,139; white, 9,928; colored, 8,283.

The surface is undulating—in parts hilly, and there are some considerable mountains. Smith's River flows through the middle of the county, and Mayo through the southwest. These, with their numerous branches, afford ample water-power.

The soil of Henry is very fertile and the climate salubrious. A correspondent well says: "In this county we have comparatively warm winters and cool summers; and there is scarcely a county in the State freer from malaria than this. Perennial streams of fine freestone water are found in all parts."

Tobacco, corn, wheat, oats and grass are its principal productions.

The tobacco of Henry is celebrated for its fine quality, and the production is rapidly increasing. Henry county "fillers" are known wherever tobacco is used.

Sweet potatoes do well here. From two to three hundred bushels can be raised per acre under good cultivation.

This is a fine grass county. Clover, blue-grass, timothy, orchard, Randall, tall meadow oat grass and red-top, all grow remarkably well here, as do all the cereals grown in Virginia.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,219	\$108,631
Cattle	4,497	36,389
Sheep	1,199	1,629
Hogs	8,739	6,479

The grape is at home here, as are the apple and peach. Nectarine, filbert, apricot and fig have been grown.

The calycanthus grows wild in the sheltered dales of this picturesque region.

The county of Henry has as fine and as great a variety of timber trees as nearly any county in Virginia, with rich land, suited to all kinds of farming and planting, or the raising of cattle or sheep. The county is improving, and is perhaps the finest tobacco county in America. There are a number of successful tobacco factories at different places in the county, and the brands of these factories are recognized in the markets of the world. This county, by its location, has all the advantages of Piedmont in its soil and exposure, and all of the bright tobacco belt of Southside in its temperature.

Iron ore in immense beds, mica, soapstone, chalybeate and alum water are found in Henry.

Schools and churches in various parts of the county; graded school at Martinsville. Number of public schools, 82—white, 57; colored, 25.

The rate of county taxation is 100 cents on the \$100 value of property; 10 cents for county schools and 10 cents for district schools.

Since the Danville and New River Railroad was constructed through Henry the town of Martinsville, the county-seat, has grown with phenomenal rapidity. Within five years it has increased from a population of three hundred to about three thousand at the present time. It is a live town, having ten tobacco factories and nearly a half million of dollars invested in manufacturing enterprises of various sorts—as iron foundries, machine shops, etc. It has four large warehouses for the sale of leaf tobacco. The Norfolk and Western Railroad from Roanoke to Winston, N. C., traversing this county, has given a new impetus to its agriculture and trade.

HIGHLAND

Was formed in 1847 from Pendleton and Bath counties. It is nearly a square of about twenty miles each way, and contains 264,911 acres. This is an elevated mountain region on the northwest line, dividing Virginia from West Virginia. This county is in the western, or rather northwestern part of Virginia, bounded west by the Alleghany and east by the Shenandoah mountains, and is on the high dividing lands between the James and Potomac waters, and from 1,500 to 4,500 feet above the sea. Population 5,352—males, 2,890; females, 2,862; white, 4,930; colored, 422. The soil is mostly limestone, and produces good crops of corn, wheat, oats, rye, buckwheat and grass. The Kentucky blue-grass springs spontaneously wherever the timber is removed, and furnishes the finest pasture, not inferior to that of the best lands of Kentucky. Grazing and the rearing of horses, cattle, sheep and swine constitute the main reliance of the owners of the soil.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,400	\$94,955
Cattle	8,450	113,154
Sheep	12,395	25,992
Hogs	2,735	3,240

The middle and eastern parts are more inclined to be sandy and slaty, and produce fine crops of grain and fruits. Agriculture, combined with stock-raising, is the leading occupation. Corn, wheat, rye, buckwheat, potatoes, oats, hay

and orchard products are raised. Butter, honey, cheese, wool, dried fruits and maple sugar are also produced. This county leads the State in maple sugar, is fourth in buckwheat, has a large wool clip, and noted pasture and meadow lands, as shown by the census of 1880.

Valuable timber, especially walnut and wild cherry of the very best quality for cabinet-makers' use, is abundant, and when this section shall be endowed with railroad facilities it will constitute a large item of wealth; and in addition there are the different kinds of pine, walnut, white, red and chestnut oak, poplar, linn, sugar maple, hickory, etc., millions of feet of which could be made valuable by the aid of the streams, on which logs might be floated either north by the South Branch and North Fork waters leading to the Potomac, or south by the Bullpasture, Cowpasture and Jackson River waters, running into the James, affording excellent advantages for lumbering.

The undeveloped resources of this county lie in the ores, iron and other kinds, and the great forests of valuable timber that skirt the mountain sides.

The following wild animals are found in this county: Bear, deer, wild-cat, red and gray fox, raccoon, woodchuck, opossum, squirrels of all kinds, hare, mink, weasel and skunk.

The fowls and birds are: Turkey, pheasant, duck, partridge, robin, thrush, catbird, pigeon, jay, wren, sparrows of different kinds, swallows, martin, wood-pecker, sapsucker, woodcock, redbird, blackbird, bluebird, lark, whippoorwill, bullbat, snowbird, tomtit, raintrow, eagle, hawk, owl, crow, buzzard. Very curiously, it is reported that in the fall and winter all these birds disappear except the turkey, pheasant, partridge, duck, crow, English sparrow, blackbird, owl, eagle, hawk and snowbird.

The county is drained by the head-waters of Cow-pasture and Jackson rivers, emptying into the James, and by some of the head-streams of the south branch of Potomac River, which interlace in this elevated water-shed of the two river systems, and mark out the track of the great line of railroad which has been projected and will at some day not distant connect Pittsburg with the inexhaustible deposits of iron ore in Alleghany, Botetourt and the adjacent counties, and will quadruple the value of the lands of Highland.

Iron ore, coal, and marble are known to exist in abundance in this county, and probably other valuable minerals will be found when its access to market will justify more extended explorations.

Monterey (population 300), the county-seat, is on the Staunton and Parkersburg turnpike, which is a fine road and runs through the centre of the county. All the county roads are fair.

There are public schools all over the county in every settled portion, besides a graded and normal school at Doe Hill, and an academy at McDowell, in the eastern part.

Number of public schools, 47—white, 44; colored, 3.

Rate of county taxation for all county purposes is 60 cents on \$100 valuation of real and personal property.

There is no place where a living is more easily made and where the people enjoy more of ease and leisure. The climate is healthy and invigorating, and the people are kind and hospitable.

ISLE OF WIGHT

Was one of the original shires into which Virginia was divided in 1634. It is thirty-five miles long, with a mean width of about ten miles. Population, 11,313—males, 5,823; females, 5,490; white, 6,169; colored, 5,144. It has 191,451 acres of land.

The ancient name of this county was "Warros cozack," as it is spelt by Capt. John Smith. He first visited it in the fall of 1607. On the 30th of July, 1619, Capt. Christopher Laune and Ensign Washer represented it in the first General Assembly of Virginia—the first on the American continent. In 1620 Sir Richard Worship and others petitioned the London Company to change the name to Isle of Wight Plantation, but the change was not made until 1637, when it was done by the General Assembly of Virginia.

The surface is mostly level, and the soil a light sandy loam. The productions are corn, wheat, oats, cotton, peanuts, fruits and vegetables. The land is easily tilled and produces good crops. Trucking is carried on very successfully.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,227	\$127,446
Cattle	8,949	27,733
Sheep	617	1,145
Goats	144	72
Hogs	9,977	14,550

The wild animals are the deer, fox, raccoon, hare, opossum, squirrel, otter, musk-rat, mink, ferret and weasel.

Vegetables, fruits and melons are shipped from this county to the Northern cities in large quantities. The supplies of fish and oysters are very large and valuable.

Game is abundant. The streams furnish geese, ducks, swans and water-fowls in abundance; the swamps, sora, reedbills, woodcock and snipe; the fields and forest, turkeys, partridges, pigeons, larks, robins and an endless variety of song birds. The county has, like other Tidewater counties, eagles, owls and crows. Poultry succeeds well, embracing everything from the turkey to the guinea-fowl.

This county has valuable and extensive deposits of marl, rich in carbonate of lime. This and lime are largely used in peanut culture. The marls of Tidewater Virginia in the James River Valley, which, in the thirties, under the inspiration and investigation of Edmund Ruffin, of Coggins Point, checked the depopulation of this now fertile and profitable section, are coming again into use, and agricultural lime, at the door of every farmer, will yet make a garden of Tidewater Virginia.

Timber of all the varieties native to this section is abundant. The health of this county is as good as any portion of Tidewater. Every year the value of the timber of this section is increasing. Immense quantities of pine, cypress, juniper, gum and other Tidewater woods are marketed in the great lumber-yards of Norfolk and Portsmouth.

The transportation facilities of this county are excellent.

This county has the James River on its northeast border, and is penetrated on the south by Blackwater and branches of Nansemond River, Pagan Creek and their tributaries. The Norfolk and Western Railroad traverses the centre

and the Seaboard and Roanoke Railroad passes through the southern part. These roads, together with the navigation on the James and on Pagan Creek, place all parts of the county within easy and quick communication with the markets of the whole country.

Taxation: The county levy for county expenses is $33\frac{1}{2}$ cents on the \$100 assessed value of real and personal property.

Number of public schools, 58—white, 38; colored 20.

The county is well supplied with churches—Episcopal, Methodist, Baptist, Presbyterian and Disciples. One of the most interesting relics of the past (the most interesting to the antiquarian) is Benns church, which stands in the forest five miles from Smithfield. It is certainly the oldest church in Virginia, and is said to be the oldest in America, built by European hands. Howe, in his historical recollections of Virginia, published in 1856, says:

“Within an hour's ride from Smithfield, near the road to Suffolk, in the depths of the forest, stands an ancient church lately in ruins, but now repaired. It is alike an object of interest from the secluded situation and its great antiquity. We have before us a communication from a highly respectable gentleman of this vicinity, which gives strong evidence that it was built in the reign of Charles I., between the year 1630 and 1635. Tradition, too, states that it is the second church erected in Virginia. The brick, lime and timber were imported from England. The timber is English oak, and was framed before shipment. The whole structure was built in the most substantial manner; and, even now, the wood-work, where not exposed to rain, is perfectly sound, and the mortar sufficiently hard to strike fire when in collision with steel. The structure is of brick, has a lofty tower, and is in good preservation. Its walls are overrun with a delicate net-work of vines.

“In its day it was a splendid edifice. One window, of about 25 feet in height, was composed of painted glass, representing scriptural subjects. It was probably abandoned about the time of the American Revolution, when the Episcopal Church, for a time, became nearly extinct in Virginia. Within the last twenty-five years it has been temporarily occupied by a sect called O'Kellyites.”

It is thirty by fifty feet, with a tower eighteen feet square and fifty feet high. Further investigation represents it as having been built under the care and superintendence of Sir Joseph Bridger in 1632.

Howe mentions a project for its repair. This has since that time been done, and the house has been used as a regular appointment by the Methodist Episcopal Church South.

Smithfield is the largest town and shipping point. It is situated at the confluence of Cypress and Pagan creeks, four miles from James River, on a tract of 2,275 acres, an original patent, and passed to the children of Nathan Smith, the patentee, by his will in 1645.

Smithfield was an important trading post long before it was incorporated in 1752. It has now a population of about 1,000, with banks, stores, factories, churches, schools and all the industries that accompany a busy town. It has the largest peanut factory in the State and probably in the world, with electric plant working 175 hands and turning out about 200,000 bags of peanuts per annum, and there are two other large factories. For more than a century Smithfield has been celebrated for its hams, which are rated superior to the Westphalia, of which 200,000 pounds were shipped in one year.

Besides a daily steamer to Newport News and Norfolk, many sailing vessels are employed in the trade of this place. There were handled here the year ending July 1, 1891, 4,000,000 feet of lumber, 20,000 barrels of potatoes, 230,000 bags of peanuts, 25,000 packages of fruit, 1,200 crates of strawberries, 2,500 crates of eggs, 5,000 barrels of flour, 20,000 bushels of oysters (local fishing), besides 1,000 barrels of fish and oysters by steamer. More than \$125,000 was paid on freights to and from this point. The above enumeration does not include a large trade in cattle, sheep, horses, farm products, truck, etc.

JAMES CITY.

James City was one of the original shires into which Virginia was divided in 1634. Its length is 26 miles; breadth, 8 miles; area, 9,277 acres. Jamestown, in this county, was settled May 13, 1607, by Capt. John Smith and his companions. Of this deeply interesting spot, little now remains but a church-yard and the ruins of an old church. Williamsburg, the county-seat, was laid out in the ciphers "W." and "M." This was first called "Middle Plantation," and is the oldest incorporated city in the State, having been settled in 1632. In 1698 the seat of government was moved from Jamestown to Williamsburg, and it continued the capital until 1779, when it was removed to Richmond. In this old city is the "Old Powder-Horn," memorable as being the building from which Lord Dunmore removed the powder belonging to the colony, which caused the first assembly of an armed force in Virginia in opposition to royal authority. Here is also Bruton Parish church, which contains the font from which Pocahontas was baptized. The Eastern Lunatic Asylum is also situated here, the first institution in this country at which colored lunatics were treated, and now in the full tide of success for the maintenance and cure of white insane.

On Ware Creek, a tributary of the York, is the "Old Stone House," the most curious relic of antiquity of Virginia, and supposed to have been built by Capt. John Smith. In Howe's History of Virginia, this is located in New Kent, but this is a mistake.

Two battles were fought in this county during the Revolution—the first June 25, 1781, at Spencer's Ordinary; the second near "Green Spring," once the elegant home of Sir William Berkeley. One battle was fought at Fort Magruder during the late war, May 4th and 5th, 1862. A skirmish also took place at Olive Branch church.

The population of the county, Williamsburg included, is 5,643—males, 2,823; females, 2,820; white, 2,317; colored, 3,326.

Churches are numerous; the Baptists, Christians, Methodists, Episcopalians and Presbyterians have churches in the county and town, or adjacent thereto.

Public schools are reasonably convenient to all parts of the county, and in Williamsburg there are public and private schools and a well-conducted high school. Near Williamsburg, in this county, is William and Mary College, founded in 1693. This institution has been three times destroyed by fire; the last time by the Federal soldiers during the late war, but was rebuilt by private subscription, the people of this locality (although almost ruined by the war) contributing thereto, and is now in a most flourishing condition. Number of public schools, 17—white, 9; colored, 8.

There is no newspaper now published here. The *Virginia Gazette* was published at Williamsburg August 6, 1736, and was the first newspaper ever published in Virginia; it has just been revived.

Corn is the staple crop, and produces well when properly cultivated. Grass succeeds well here, especially clover. Peanuts, melons, fruits and trucks are planted here, and suit the soil.

Fruits and flowers: Apples, peaches, pears, grapes, strawberries and raspberries are successfully cultivated; while blackberries, huckleberries, grapes, sloes, walnuts, hickory-nuts, etc., grow wild. Wild flowers, too numerous to mention, grow in profusion.

Dairy: This industry has not been developed, but would pay well.

Number of horses and mules, 212; cattle, 1,920; sheep, 906; hogs, 1,827.

Poultry is raised on most of the farms and when sold commands good prices, but has not been made a specialty.

Marl is found here of good agricultural value and in inexhaustible quantities. There is a ledge of rock containing iron, running from James River across the county in a southeasterly course, which tradition says was once successfully worked near a place known as "Iron-Bound Meadow." The clays of this county are sedimentary deposits, and free from the mineral salts, such as lime, magnesia and alum, which damage the clay in other places for fine brick and pottery, causing the white disfigurements so often seen on fine brick fronts. There is considerable fine fire-clay, terra-cotta clays and immense beds of fine red brick-clays in easy reach of transportation.

Timber: Only a small part of the county is cleared; the balance is in timber. Old fields turned out will grow second-growth pine in from fifteen to twenty years. Thousands of cords of wood are cut. It brings fifty cents on the stump. An acre will average fifty cords. The lands which have never been cultivated are in large pine, oak of all kinds, hickory, walnut, chestnut, poplar, ash, etc.

The county is bounded by York River on the north, and by the Chickahominy and James rivers on the south.

The Chesapeake and Ohio Railway runs through the entire length of the county. There are six stations, viz.: Diascund, Toano, Kelton, Ewell, Williamsburg and Grove.

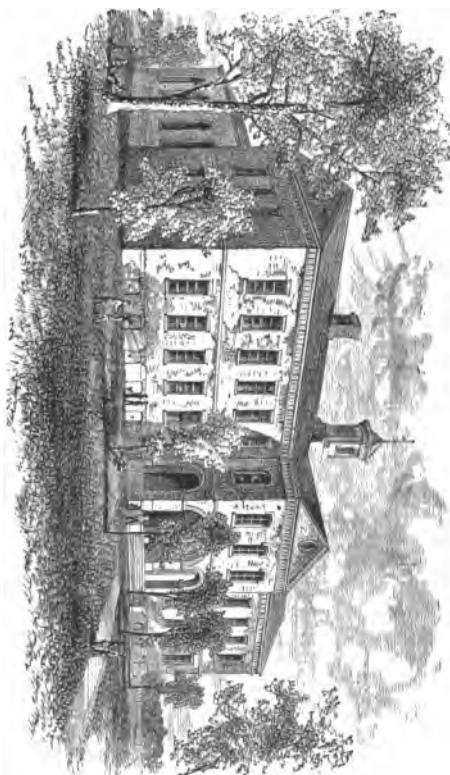
The public roads are level dirt roads, and easily kept in order if well drained.

There are a number of saw-mills and grist mills, and a large brick-yard plant on the Chickahominy.

Fisheries: Diascund Creek, on the boundary, is famous for herring; Chickahominy River for shad, sturgeon and green-back perch; James River for the same fish, and for rock and numerous other fish. On York River flats, between Ware and Simcoe creeks, oysters of the finest size and quality are grown. About five hundred bushels are planted to an acre. The seed oysters are worth twenty-two cents per bushel. After one year's growth they are worth forty cents; at two years, sixty cents, and three years one dollar per bushel. The increase in quantity from the growth is very great; but the loss from theft and other casualties about equal this.

Game: This is the sportman's paradise. In our fields are partridges and other birds; in the woods, deer, turkeys and small game; in the marshes, sora; on the water, ducks and geese; while fox-hunting cannot be excelled. The country is comparatively level and open, and the dogs can be followed from the start to the finish.

Live stock, etc: The county is not particularly well adapted to cattle or hog raising, but for sheep raising it is first-rate.



WILLIAM AND MARY COLLEGE.
Williamsburg, Va.
(By Courtesy of the "Century.")



Temperature: The temperature is so equalized by large bodies of water that it is not extremely hot in summer or extremely cold in winter.

The Chesapeake and Ohio Railway, with its six stations and broad rivers, affords all the transportation that could be desired.

Williamsburg, the county-seat, was once the centre of wealth, fashion and learning of the Old Dominion, the influence of which has left its impress upon the place, manners and characteristics of the inhabitants of the city and surrounding country. The people are intelligent, moral, hospitable and kind.

The county is between Richmond, the State capital, and Virginia's infant city, Newport News—being less than two hours' ride by rail from the former, and one hour's ride from the latter place. Unimproved land can now be bought at \$4 per acre. Improved lands are higher, but cheap; it is believed that in the near future there will be a demand for land along this end of the Chesapeake and Ohio Railway.

Taxation for county expenses, 40 cents on the \$100 value of property; county schools, 5 cents; district schools, 15 cents; public roads, 10 cents; total, 70 cents.

KING GEORGE

Was formed in 1720 from Richmond county. Population, 6,641—males, 3,383; females, 3,258; white, 3,433, colored, 3,208. Area, 111,676 acres.

A very small portion of the county is in original timber, and only a few farms under a systematic rotation of crops. The production of truck and garden vegetables is yearly increasing. Enclosures are generally of wire, post and rail. The lands on the rivers are very good and produce valuable crops of wheat, corn, oats and vegetables, and are generally light and easily cultivated. Commercial fertilizers are generally used. Cabbage and turnips are regularly cultivated as a second crop after peas and potatoes.

It lies between the Potomac and Rappahannock rivers, which form the north and south boundaries, respectively, and furnish extensive navigable waters for the entire county, the width between the rivers being from five to ten miles, while the extent of river frontage is about twenty miles on each side.

There are no railroads, and the character of the public roads, while not good, has much improved, and the question of "good roads" is attracting attention. There are seven grain mills in the county. Reliable lines of steamboats ply regularly on the Potomac between Washington and other distant cities, and on the Rappahannock between Fredericksburg and Norfolk and Baltimore. These steamers touch at convenient points for freight and passengers on opposite sides of the county.

Besides the valuable transportation facilities afforded by these tidal highways, the streams furnish large resources in fish, oysters and wild fowl.

Wild animals: Deer, fox, raccoon, opossum, otter, musk-rat, squirrel, hare, mink and weasel.

Wild fowl: Turkey and partridge.

Water fowl: Geese, ducks of various kinds and cranes.

Predatory birds: Eagle, hawks of various kinds, owl, crow, buzzard.

Forest and field birds: Mocking-bird, robin, lark, dove, blackbird, martin, swallow, sparrow, pewit and wren.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,659	\$73,046
Cattle	3,105	30,863
Sheep	2,027	4,238
Hogs	2,455	5,207

The means of plenteous and even luxurious living are abundant, and render this a most desirable county to live in. There are over thirty mercantile establishments in the county.

There are some large and valuable estates in this county, and it was once the residence of many wealthy families. These estates, when for sale, can be bought for much less than their intrinsic value, and, considering facilities for cheap transportation for crops, ease of cultivation and productiveness of soil, all the lands are exceedingly low-priced.

Fruits of all kinds succeed well in this section, and small fruits and berries and grapes are receiving increased attention.

Marls of various kinds are found in this county, and when applied in large quantities form a complete and cheap substitute for agricultural lime in farming.

Number of public schools, 33—white, 20; colored, 13.

Churches: There are over thirty churches of various denominations.

Taxation for county purposes is at the rate of 50 cents on the \$100 assessed value of real and personal property.

KING AND QUEEN

Was formed from New Kent in 1691. It lies between the Mattaponi and Piankatank rivers, which, with their numerous tributaries, drain this county, and make it one of the best watered in the State. It is about 30 miles long by 10 wide, and contains 194,713 acres. Population, 9,669—male, 4,710; female, 4,959; white, 4,235; colored, 5,434.

Eastern Virginia enjoys a remarkable exemption from violent storms. A severe and destructive wind is rare, and in Tidewater Virginia floods can do but little damage, owing to the fact that the lands are rolling and the rivers lie between high banks. Floods occasionally damage some of the flat lands on the upper portions of the rivers above tide-water, but the area liable to them is very small. King and Queen needs only this description.

Average temperature, about 67°; average rainfall, about 44 inches.

Gray marl underlies a large portion of the county and is very accessible, being dug from banks instead of having to be raised from pits. Some of it is very rich in lime, yielding upon analysis 70 to 80 per cent. carbonate of lime.

The river lands, which constitute a large part of the area, are very productive, and the inexhaustible beds of marl found here afford the means of permanent improvement. The staple crops are wheat, corn, oats, rye, hay, fruits and vegetables.

There are between fifteen and twenty grain mills in the county.

The lands are variable in quality and productiveness. Some are heavy and stiff, and well adapted to wheat, grass and potatoes. A large portion, especially on the rivers, is light, but even these generally yield good wheat crops. Many of the farmers grow good crops of clover, timothy and orchard-grass hay. Some

of the light lands produce profitable crops of peas. Many use pea fallows, and lately some are substituting rye instead of peas and clover as a fallow crop, and commercial fertilizers are successfully used.

Some good tobacco is raised in the upper portion, and the cultivation is gradually extending, and may, in the course of some years, obtain over the whole county as it was one hundred years ago.

The farmers are, to some extent, beginning to raise truck, chiefly Irish and sweet potatoes, to which much of the land is well adapted.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,584	\$190,090
Cattle	4,547	48,505
Sheep	2,306	4,730
Hogs	2,534	5,985

Wild animals: Deer, fox, squirrel, hare, opossum, raccoon, ground-hog and polecat.

Domestic fowl: Turkeys, chickens, geese, ducks, guinea and pea-fowls, and pigeons.

Wild fowl: Turkeys, ducks and geese.

Birds: Partridge, mocking-bird, goldfinch, bluebird, blackbird, redbird, swallow, martin, catbird, jay, sparrow, sora, lark, pewit, tomtit and woodpecker.

There are many good peach and apple orchards. Peaches, as a crop, are rather uncertain, as they are liable to be killed by frost after blooming. The apple crop is more certain, and early apples are destined in the future to be a source of considerable profit, as they can easily and cheaply be shipped to the Northern cities.

County taxes: 50 cents capitation tax, and 45 cents on the \$100 value of real and personal property. Fourteen per cent. of the tax collected is for county schools.

The forests contain white, red and Spanish oak, yellow pine, gum, sycamore, poplar, hickory, dogwood, holly, walnut, persimmon, beech, birch, etc.

Cord-wood and railroad ties are a source of considerable revenue.

Number of public schools, 48—white, 27; colored, 21.

There are twenty churches of the various denominations.

The Mattaponi River lies on the southwest side of the county, and is navigable almost to the upper boundary. There is steamboat navigation as well as many sailing vessels. At present no railroad passes through the county, but one is now being surveyed, and grading has begun at the eastern end (Richmond and Chesapeake). The Richmond and York River Railroad passes through King William, and is accessible to the middle and lower portions of this county.

KING WILLIAM.

This county is a narrow peninsula, lying between the Pamunkey and Mattaponi rivers, which unite and form the York. It is some thirty miles long by about eight miles as its average width. Population, 9,605—males, 4,823; females, 4,782; white, 3,783; colored, 5,822. Area, 172,433 acres.

As might be supposed, the land lies well for cultivation. About 10 per cent. of the area is in original timber, and 40 per cent. under systematic rotation of crops.

The flats along the rivers are extensive and productive; the soil throughout the county is of good quality, producing a fine quality of corn, wheat, tobacco, oats, peanuts, peas, potatoes and vegetables of all kinds. Clover, millet and other hay crops do well; timothy also does well in many places on the bottoms and improved highlands.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,804	\$85,570
Cattle	8,095	31,793
Sheep	1,497	3,572
Hogs	2,506	6,792

Poultry: Ducks, geese, turkeys, chickens, guinea-hens, pea-fowls and pigeons.

Wild animals: Deer, foxes, raccoons, ground-hogs, opossums, polecats, minks, otters, squirrels and hares.

Water fowl: Ducks, geese, swans, cranes, willets, and marsh-hens.

Wild fowl: Wild turkeys, pheasants and partridges.

Predatory: Eagles, fish-hawk, ravens, crows, buzzards and owls.

Forest and fields: Mocking-bird, gold-finch, bluebird, blackbird, redbird, martin, jay, sora, lark, catbird, swallow, woodpecker and sparrow.

Large deposits of marl are found in many sections. There is abundance of good marl, which has been used with much benefit to the soil. The green-sand marl of King William is similar to that of New Jersey, which has been found so valuable as to bear carriage considerable distances from the beds.

The timber consists of pine, oak, chestnut, beech, poplar and ash. The timber is utilized as cord-wood and staves, and is sawed by local mills into lumber.

The green sand along the Pamunkey is one of nature's best fertilizers, producing wonderful improvements wherever applied, and large quantities are raised and shipped on the river.

The climate is unsurpassed; just cold enough for ice and never too hot to work. Average temperature, 59°; average rainfall, 42 inches. The present has been an uncommon winter—nothing to equal its severity for more than thirty years.

The health of the inhabitants will compare favorably with any section of the South. The supply of water is good from never-failing wells. Artesian wells have been introduced in different parts of the county and a large number in West Point, and they have succeeded beyond expectation in furnishing a full supply of the best water.

The Pamunkey and Mattaponi are navigable for steam and sail boats of large size for about two-thirds of the length of the county, affording ample and cheap transportation to all the Eastern markets.

The York River division of the Richmond and Danville system of railroad passes through about twenty miles of the county, connecting daily with steamers for Baltimore and other points North, and semi-weekly with those for New York, Boston and Providence. Another railroad from Richmond is in course of construction, which, when completed, will cross the county near its centre, and will afford quick connection with Richmond and Baltimore. The distance to Richmond is some twenty miles by the road. The county roads are well located, but are not good for want of attention and machinery.

West Point, the deep-water terminus of the Richmond and Danville system of railroads, is situated at the extreme east point of the county. It is a grow-

ng town, with the best of harbors, water of sufficient depth for the largest ocean steamers, with the most extensive wharves in the South, where ships are regularly loaded with cotton, flour, lumber, etc., for Europe and South America. There are about forty mercantile establishments in the county.

Public schools are in successful operation and meet the wants of the people. Number of public schools, 42—white, 23; colored, 19.

There are sixteen churches of the various denominations.

Labor is abundant and cheap; good men can be had at from \$10 to \$12 per month and found.

County levy: For county expenses, 15 cents on \$100; public schools, 15 cents; public roads, 10 cents; total for all purposes, 40 cents.

The lands are now cheap, but prices are advancing, as quite a number of farms have been lately sold to Northern and Western settlers.

LANCASTER

Was formed in 1651. It lies on the north bank of the Rappahannock River, where it debouches into Chesapeake Bay. Northumberland and Richmond counties bound it on the north. Area of the county, 80,486 acres. Population, 7,191—male, 3,780; female, 3,411; white, 3,171; colored, 4,020.

The surface is mostly level, with some rolling lands. The soil is a sandy and clay loam, producing good crops of corn, wheat, oats, vegetables and fruits. The lands are easily improved, and, with clover and peas and the judicious use of fertilizers, are easily kept productive. Corn is the chief farm crop, but some of the lands produce large crops of wheat. With water transportation to the Northern markets, corn is a profitable crop.

A large area, consisting of apples, peaches, pears, apricots, plums, etc., of this county is in orchards. Cheap communication with Northern markets and proximity to the National Capital, make early fruits and berries profitable.

Ship and other timber, and a large quantity of cord-wood, is shipped from this county; and immense quantities of oysters are shipped annually, and the fisheries support a number of people.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,336	\$64,681
Cattle	2,790	30,273
Sheep	921	2,149
Hogs	2,308	5,223

Spring lambs, which can be raised early in this county and sent North, have caused increased interest in sheep.

It is drained by numerous creeks running from the interior of the county, tributaries of the Rappahannock River and of Chesapeake Bay. There are two steamers plying between Baltimore and Fredericksburg, which touch at various landings in this county four times a week; and one steamer between Baltimore and Piankatank, touching at a wharf on Dymor's Creek.

Lancaster has the following wild animals: Deer, foxes, raccoons, opossums, squirrels and hares in the woods; and otters, musk-rats and minks in the waters. Of water fowls, there are the various kinds of ducks, geese, cranes, willets, etc. In the fields: Wild turkeys, partridges, larks, doves, ricebirds and killdees. In the woods: Robins, blackbirds, sparrows, woodpeckers, etc. The blue jay has about become extinct in the county.

With cheap and quick transportation to the cities north, this county is enabled to throw her early products on the market at the most propitious time, and trucking is becoming a considerable part of all the farming in the county.

The health of the county is good. Consumption is rarely heard of. Average temperature about 58°; rainfall about 46 inches.

Number of public schools, 25; white, 15; colored, 10.

Rate of county taxation: For county purposes, 45 cents on the \$100 value of property; schools, 15 cents; district schools, 15 cents; county roads, 15 cents; district roads in three districts, 5 cents.

LEE

Was formed from Russell in 1792. It lies in the southwest corner of the State, bordering on Tennessee and Kentucky. Its greatest length is sixty-five miles; mean breadth, ten miles. It contains 299,294 acres. Population, 18,216—male, 9,631; female, 8,585; white, 17,002; colored, 1,214.

Three-fifths of the surface is mountainous or hilly, but the mountains are rich to the top, and a large proportion of the soil of the entire county is very fertile.

The productions are corn, wheat, buckwheat, oats, rye and tobacco. The cultivation of tobacco is on the increase. A great variety of vegetables and fruits is produced.

This county has always ranked high in the rearing of hogs. In the census of 1880 it was the second county in the number of swine, led only by Rockingham. This year it has fallen behind several counties, Rockingham still leading. In the same census Lee stood at the head of the list in the production of honey. It continues to be a rich and prosperous county.

The timber consists of oak (an immense quantity of white oak), poplar, pine, maple, buckeye, birch, beech, ash, cucumber, mulberry, locust, hickory, chestnut, much black walnut and wild cherry, with vast forests of red cedar, near Powell's River, of the best quality for the manufacture of cedar-ware. No county exceeds this in the quality and value of its forest products. With the resources of this county, its minerals and its timber, taken together, with its fertile and productive soil adapted in the highest degree to cereal production, grazing, fruit and tobacco, it will rival any county in the State.

The county is rich in minerals. Poor Valley Ridge, which runs parallel to Cumberland Mountains through the whole length of the county, has a rich vein of iron ore (dyestone, red hematite) extending throughout the entire length. The Cumberland Mountains contain inexhaustible supplies of the best bituminous coal, a part of which is in this county. There are strong indications of zinc, lead and other valuable minerals. Salt has been made at two points in this county, but there are no works now in operation.

If future explorations discover salt, coal, lime and manganese in close proximity and the location be accessible by rail, the cheap production of soda-ash and bleach will be assured, and a mine of wealth opened for the county.

About one-half of the area of the county is cleared land, one-tenth of which is in wheat, the remainder in oats, rye, corn, tobacco and grass. This is a fine grass county, and is famous for fine cattle, horses, etc. It has, moreover, at least 2,500 acres in orchards of every variety of fruit.

LIVE STOCK.

	Number.	Value.
Horses and mules	4,785	\$280,664
Cattle	11,046	14,870
Sheep	5,954	5,975
Hogs	11,049	14,610

It is well watered by Powell's River, which is navigable for flat boats, and gives an outlet for the products of the county.

The railroad system contemplated in the Southwest will, in the near future, open up the whole Appalachian division; in fact, it has begun and is progressing.

Number of public schools, 99—white, 90; colored, 9.

Churches of the various denominations are scattered through the county.

LOUDOUN

Was formed in 1757 from Fairfax. It is the northernmost of the Piedmont counties; separated from Maryland by the Potomac River, and by the Blue Ridge from Jefferson county, West Virginia, and from Clarke county, Virginia; Fauquier and Prince William adjoin it on the south and Fairfax on the east. Within these limits are included 322,745 acres of the finest land to be found in any one county in the State. Population, 23,274—males, 11,301; females, 11,973; white, 16,696; colored, 6,578.

The surface of Loudoun is varied with mountains, gently sweeping hills and broad valleys, of which the greater part is exceedingly fertile, yielding immense crops of corn, wheat, hay and oats, and supporting great herds of fine cattle and flocks of sheep. Loudoun took a high place agriculturally in the census of 1880, and has probably lost as little of its prestige, if not less, than any county in the State. It then, of the counties, stood first in the production of corn, butter, eggs, wool, milch cows and sheep, and second only to Fauquier in the number of stock cattle. Taken as a whole, probably the best farming in the State is now done in this county. Much attention has been paid to improving breeds of horses, cattle and sheep by the wealthy and intelligent farmers of Loudoun.

LIVE STOCK.

	Number.	Value.
Horses and mules	10,172	\$594,856
Cattle	22,596	390,260
Sheep	18,804	58,082
Hogs	11,227	30,502

Colonel Henry Fairfax has in this county a large stud of the finest hackneys in the country, and there are many blooded horses with fine records reared in Loudoun. Dairying is carried on successfully in some places, and the product of butter is large.

The mineral wealth of this county is very considerable—iron, copper, silver, limestone, asbestos, hydraulic limestone, barytes and marble. The finest marble quarry in the State is being worked. Copper has also been developed and worked.

The Washington, Ohio and Western Railroad, which traverses this county, crossing it almost equally, furnishes an outlet for the immense exports of cattle,

grain and hay sent from the central portions of Loudoun, and the northern edge of the county is in easy communication with the Washington branch of the Baltimore and Ohio Railroad and the Chesapeake and Ohio Canal, just across the Potomac.

The public roads and turnpikes of the county are better than those of most counties, and the disposition of the people is in the direction of good roads.

Leesburg, a fine old town, is the county-seat. It has a population of about two thousand.

Number of public schools, 116—white, 85; colored, 31.

All denominations are represented by churches and congregations. The Friends or Quakers are quite numerous and influential in the county.

Wild-cats are found in the mountains, and red and gray foxes, raccoons, opossums, woodchucks, squirrels, hares and smaller animals are general in the county.

Wild ducks, geese, turkeys, pheasants, partridges and woodcock among the game fowls, and crows, buzzards, owls and hawks are among the predatory, and the usual list of song birds are to be found.

In view of Loudoun's corn record, we copy a letter from an old issue of the *Rural New-Yorker* sustaining the claim:

LOUDOUN Co., VA., April 2, 1881.

Editor Rural New-Yorker:

DEAR SIR: Your favor of March 30th to hand. I am glad the corn reached you safely.

A surveyor measured one acre of standing corn, thought to be an average of ten (10) consecutive acres in a fifty-acre field, which measured acre made 114½ bushels of shelled corn of 56 pounds to the bushel. The corn was planted about the first of May and husked out the latter part of September. The crop above stated was raised in 1880. Four of the best farmers in my neighborhood husked the above acre while the stalks were still standing, and shelled out as above stated. The same field was in corn in 1878, and the whole fifty-acre field made per acre 117 bushels of shelled corn of 56 pounds to the bushel, which gave the entire yield of the field 5,850 bushels. The corn was planted three feet each way, thinned to two stalks in a hill. It is generally a single-eared corn, though often two good ears grow to a stalk.

About twenty-five years ago I picked out a few of the best ears, the seed of which was planted the next year to itself, and produced a better crop than the other portion of the field. The ears now are double the size they were then.

I have taken a number of State and county premiums for the best sample as well as the largest product. The field on which the above crops were raised is rolling upland, and not above the average of my farm of 485 acres.

Very respectfully,

Wm. H. B.

A good deal of money from abroad has been invested here, but the high price of land has kept out much increase of population by immigration.

Taxation for county purposes, 30 per cent. of State tax on value of property, to-wit: 12 cents on \$100 value of property.

LOUISA

Was formed from Hanover in 1742. It is thirty miles long and about eighteen miles wide, and contains 286,445 acres of land. Population, 16,997—males, 8,257; females, 8,748; white, 7,192; colored, 9,805.

North Anna River forms its northern boundary, separating it from Spotsylvania; the South Anna drains its central parts, and these rivers, with their tributaries, furnish much valuable bottom land and numerous sites for mills, with abundant water-power.

A view of the map of this county reveals, as a marked feature, an array of rivers and creeks, and of never-failing streamlets of the purest freestone water, such as few other sections equal or surpass; and a glance at its general topography is equally interesting, as showing such a variety and profusion of woodland, embracing many of the most useful and valuable timbers, as is hardly much exceeded anywhere in the State, and with such a diversified surface and soil as peculiarly adapts it to the growth of almost every kind and class of timber product.

The surface is gently undulating, and the soil in most parts of an excellent quality. In the western part of this county is a remarkably productive district of land, called "Green Springs," supposed to be the bed of an ancient lake.

Along the borders of the streams are many wide and fertile flats, capable, under good management, of producing heavy crops of cereals and grasses, while in the uplands, and often on the same farm, may be found almost every variety of color, texture and quality of soil—from heavy clays to fine and light sandy loams—in reds, chocolates, grays, etc. The surface here is occasionally dry and broken, and often, from hard cropping and reckless management, is und badly washed and gullied, and yet even these unsightly "galls" are so marvelously recuperative that if only let alone and allowed the proper rest, the indigenous growth of "old-field pines," springing up thickly, in course of time complete most thoroughly the work of self-renovation.

The main crops of the county are corn, wheat, oats and tobacco, the last the main money-crop, and being well handled, usually brings very good prices. Three hundred and seventy-five dollars per hundred weight was paid in 1885 for sun-cured tobacco raised in Louisa. Winter wheat of the finest quality is grown on all our improved uplands, and on the best-improved farms the yield of an acre is about as good as the best anywhere. But at last the great staple of Louisa is tobacco, for which for more than a century she has been justly famous; and in this place it is perhaps sufficient only to say that in high-priced tobaccos, such as the finest grades of dark wrappers and sweet sun-dried fillers, this county is confessedly unsurpassed, if not unrivalled, in all the world.

Timber of the usual varieties found in Middle Virginia is abundant in Louisa, and can be made profitable if judiciously marketed. This county is rapidly improving all its live stock.

LIVE STOCK.

	Number.	Value.
Horses and mules.	2,447	\$110,880
Cattle.	6,573	73,640
Sheep.	2,885	7,040
Hogs	4,691	9,475

This county is rich in minerals. The inexhaustible deposits of copper and pyrites will one day be immensely valuable. Very soon they will be fully utilized in the manufacture of sulphuric acid, with the metal as a by-product. These rich deposits are found on the edge of the gold belt, near

Tolersville, on the Chesapeake and Ohio Railroad, and a branch road has been constructed to the mines.

The wild animals of the county are foxes, raccoons, opossums, hares, squirrels and a few deer.

The wild fowls and birds are turkeys, ducks, pheasants, partridges, woodcocks, robins, snipes, larks, doves, and all of the various field and wood birds of the temperate zone.

While this county was not devastated by the war as many others were, the celebrated cavalry-battle of Trevillian's was fought in Louisa on the Chesapeake and Ohio Railroad.

The following minerals have been discovered: Iron, gold, copper, mica, soapstone, ochre and pyrites. Mines of gold, mica and pyrites have been fully developed and largely worked. This county has also very valuable clays. Gray and red granite are also found here.

Transportation to market is furnished by the Chesapeake and Ohio Railroad, which traverses it from east to west, and a branch of the Richmond and Danville Railroad skirting the western end.

The facilities for a thorough education in every branch of study are ample. At Louisa Courthouse, and also at Aspen Hill near Cuckoo, in this county, are excellent high schools for boys, each giving full courses in ancient and modern languages and in mathematics, etc., and here also are excellent private home schools, and free schools—run for five months during the fall and winter—all over the county. Number of public schools, 97—white, 54; colored, 43.

A writer for the Hand-Book of 1886 says, after speaking of the fine oxen and sheep raised in Louisa, and the tobacco of unsurpassed quality, and the excellent church and school privileges: "Our people are public-spirited. The county roads are receiving extra attention; twenty-five convicts are at work upon them, and making marked improvements. These things are showing themselves in the advancing price of farming lands, ranging from \$5 to \$35 per acre. Recently several farms have been purchased by gentlemen of wealth and culture. Stock-raising and grazing are specialties with some of the farmers; and our farmers raise their own meat and bread."

Churches are numerous, representing all denominations.

LUNENBURG

Was formed in 1746 from Brunswick. It is thirty miles long in its greatest length, and has an average width of about fifteen miles. It contains 267,535 acres of land.

Population, 11,372—males, 5,545; females, 5,827; white, 4,636; colored, 6,736.

This county abounds in good timber of white and other oaks, pine, hickory, walnut and maple. No valuable minerals have been developed, but there were on exhibition at the New Orleans Exposition samples of glass sand, quartz and pyrite. Wonderfully fine whetstone is found in the county.

The surface is level, or gently undulating; the soil a grayish slate, or of sandy texture, easily tilled, and producing good crops. It lies between Nottoway and Meherrin rivers, the first forming most of the northern border, and the latter separating it from Mecklenburg on the south. The numerous tributaries of these rivers penetrate the county in all parts and afford many eligible locations for mill sites.

The lands of this county are lower in price than in any other section of South-side Virginia; and taking the character and quantity of crops they can produce, these lands are cheaper than the public lands on exemption.

This is a healthy region, and well adapted to fruits and the vine. The society is excellent, and the lands can be bought very low.

The wild animals of the county comprise deer, foxes, raccoons, opossums, squirrels, hares, beavers, otter, musk-rats and mink.

Wild fowls: Turkeys, pheasants, partridges, woodcock and all the forest and field birds of Middle Virginia.

The predatory birds are confined to the common owls, hawks, crows and buzzards.

The productions are tobacco, wheat, corn, oats, cotton and grass.

No county has a wider range of production. The finest bright tobaccos are here produced, and cotton of excellent quality. Sheep and small cattle rarely need feeding or housing. The cow-pea, the restorer of worn land further south, and the clover further north, both grow well in Lunenburg. This county is a part of "the race-horse region," with an historical record for horses.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,526	\$68,216
Cattle	4,817	34,076
Sheep	2,586	4,535
Hogs.	3,442	6,070

Southside Virginia, of which Lunenburg is near the centre, is destined to be not only the great fine-wool producing section of the State because of its climate and soil, but its wonderfully cheap lands will yet attract the attention of flock-masters, and it will rival any section of the Union, "tariff or no tariff."

The transportation facilities of this county are not very good. The Richmond and Danville Railroad passes along the northwest border, and the Richmond and Mecklenburg Railroad on the west line. The Atlantic and Danville Railroad passes near and along its southern border.

Rate of county taxation: For county purposes, 50 cents on \$100 value of property; county schools, 10 cents; district schools, 10 cents.

Number of public schools, 49—white, 30; colored, 19.

All denominations of Protestants are represented in the churches of the county.

The average annual temperature is about 57°; rainfall about 42 inches.

MADISON

Was formed in 1792 from Culpeper. It is about thirty-three miles long, and contains 224,745 acres of land. Population 10,225—males, 4,947; females, 5,278; white, 8,280; colored, 3,905.

This is an excellent grass and grain-producing county, besides being admirably adapted to fruit and grape culture, and fine tobacco.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,624	\$95,388
Cattle	6,865	65,194
Sheep	3,162	7,733
Hogs.	3,259	8,106

The following minerals have been discovered in the county, but none have been fully developed: Graphite, ochre, steatite, iron (magnetic and hematite) and copper.

The following sketch of the county was prepared for a former Hand-Book published in 1886:

"The nature of soils is largely controlled by geological formations, and this is well shown in Madison county.

"An arm of the large secondary formation of the triassic period, which extends from the Rapidan River through Culpeper county and other counties to the Potomac River, extends across the southeastern part of the county, crossing the Robertson River above its mouth, and having a width of one or two miles, where the formation is a red or chocolate-colored shale; the super-imposed soil is of excellent quality, producing fine crops of wheat, corn and grass. Where gray sandstone predominates the soil is of medium fertility, but easily improved.

"It has been recently stated by high authority that soils of similar secondary measures in other parts of Virginia have been found eminently adapted to the growth of high grade tobacco.

"Between this secondary deposit and the Rapidan River the underlying rocks for twelve or more miles are mostly epidote and greenstone, similar to those of the adjacent Southwest Mountain range of Orange county, the decomposition of which furnishes potash and lime. The Madison lands adjacent to Orange county appear to be of better quality, owing to some admixture of sand from the adjacent sandstone belt, and furnish in many places soils remarkably well adapted to the culture of grapes, and particularly of the valuable Catawba grape, which it is difficult to raise in many sections.

"The portion of the county lying between the secondary deposits and the region adjacent to the foot-hills of the Blue Ridge Mountains is underlaid with gneissoid sandstone, decomposing granites and metamorphic strata, all azoic, and furnishing in disintegration but little lime and potash or other mineral ingredient of value; and the soil, excepting upon the streams, is of medium quality, gray or red color, but readily improved. Adjacent to the foot-hills of the Blue Ridge the country rocks show marks of the metamorphic or igneous action accompanying the elevation of the Blue Ridge, and produce fertile soils. The slopes of the mountains grow excellent tobacco, potatoes and rye. The Blue Ridge extends along the entire northwest border of the county, throwing out long spurs, some of which nearly attain the height of the parent Ridge, whose highest point in the county is 3,860 feet above sea level. Other points reach 3,800 and 3,400 feet; average elevation of the Blue Ridge about 3,000 feet. Its top and more elevated slopes furnish excellent grazing when cleared, where cattle thrive well, owing to lower temperature and freedom from annoyance from insects.

"The lower parts of the mountains and the numerous and beautiful valleys and glens are eminently adapted to the growth of grapes, apples and other fruits, where the elevation exceeds 500 feet above the sea, and does not exceed 1,500 feet, for in this range of elevation are places where dew and frost are not often seen, and late frost rarely ever injures fruit. No section of Virginia is better adapted to the growth of pippins and other valuable apples.

"The value of lands along the eastern slope of the Blue Ridge, not exceeding 1,500 feet elevation, for fruit-raising, does not seem to be properly appreciated.

when we consider that from absence of late frosts in many places there is almost uniform success, with proper attention.

"Upon the rivers and creeks in the county are numerous bodies of very rich lands; the largest of these is on the Robertson River near Madison Courthouse, where there are about 1,400 acres in one bottom, mostly very fertile—evidently once the bottom of a lake."

The following are the wild animals of the county: Bears, wild-cats, foxes, raccoons, opossums, squirrels, hares, minks, weasels and ground-hogs.

Wild fowls: Turkeys, pheasants, partridges and woodcocks.

Forest and field birds: Larks, doves, robins, mocking-birds, bluebirds, red-birds, blackbirds, catbirds, woodpeckers, etc. There are also crows, buzzards, owls and hawks.

The following are the most important industrial enterprises: One dairy and one cheese factory, nine flouring mills, six grist mills, four furniture factories and four small tanneries.

The Virginia Midland Railroad passes near the eastern border of the county, and the Chesapeake and Ohio near the southern line, and the Shenandoah Valley is near the western border of the county; but none are near enough to save very considerable wagoning. There is one macadamized road through the county from the Blue Ridge to the Richmond and Danville Railroad.

Number of public schools, 70—white, 47; colored, 23.

There are thirty-five churches in the county—nine Methodist, nine white Baptist, nine colored Baptist, two Lutheran, one Dunkard, one colored Methodist, one Presbyterian, one Episcopal and two Christian or Disciples.

County taxation for all county purposes is at the rate of 40 cents on the \$100 value of real and personal property.

MATHEWS

Was created in 1790 from Gloucester. It is twenty miles long, and at its widest section about nine miles across—a peninsula, extending into the Chesapeake Bay, united to the main land by a narrow neck of land scarcely a mile wide, so that its boundaries are almost entirely of water. It contains 53,515 acres. Population, 7,584—males, 3,793; females, 3,791; white, 5,447; colored, 2,137.

The surface of Mathews is almost a dead level; the soil light, easily worked and fertile. Corn, wheat, oats, grass, fruits and vegetables are largely produced. Land sells from \$5 to \$30 per acre.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,044	\$43,941
Cattle.	2,246	18,426
Sheep.	707	1,056
Hogs.	3,186	5,072

Since 1879, according to the Hand-Book of that year, all live stock, except hogs, have greatly increased—notably in horses and mules. The rearing of young animals and poultry for the Northern market is profitable, as there is convenient and cheap transportation to Baltimore by steamers touching at the wharves.

Mathews is famous for oysters and fish, which are a source of large revenue, and furnishing employment for many of its inhabitants.

Shell marl is found in many localities, and a species of peat well adapted to composting is found in the ravines. These and the abundance of fish suitable for fertilizers, together with its water transportation, make Mathews an admirable location for large fertilizer factories.

Owing to its almost insular position, Mathews is swept by salt breezes, and is said to be very healthy—a most desirable location for settlers.

Wild turkeys, geese, ducks, woodcock, snipe, partridges, sora and many other water and marsh birds are abundant; while in the fields and woods are found larks, doves, robins, black, red, blue and catbirds, mocking-birds and sparrows. The usual variety of hawks and owls, together with eagles and crows, compose the predatory birds. Among the wild animals are deer, foxes, raccoons, opossums, squirrels and hares; on the waters, otters and musk-rats.

It may be remarked that Mathews is among the most thickly-settled counties in the State, not reckoning cities.

Number of public schools, 34—white, 23; colored, 11.

Churches of the various denominations are conveniently located. Taking all the advantages of locality, soil and climate into consideration, land is cheap and desirable. Average temperature about 58°; rainfall about 46 inches.

MECKLENBURG

Was formed in 1764 from Lunenburg. It is thirty-six miles long and has an average width of about eighteen miles. It contains 414,262 acres. Population, 25,359—males, 12,328; females, 13,031; white, 9,329; colored, 16,030.

It is watered by Meherrin River, which separates it on the north from Lunenburg, by the Roanoke, which runs from west to east through the southern portions, and by numerous tributaries of these rivers. The Dan and Staunton unite in this county and form the Roanoke. Upon these fine rivers there is a very large extent of rich bottom land—few counties in the State have more.

The soil is varied. Along the valleys of the streams it is alluvial and exceedingly fertile. The uplands are gray, chocolate clay, red and sandy soil, and where not injured by injudicious cultivation, highly productive. All the soils are susceptible of improvement, retain their fertility for a number of years, and when properly cultivated yield equal to the lands of any county.

In some portions of the county gold, copper, silver, granite, soapstone and kaolin have been discovered, and require only capital and persons skilled in the business for their successful and profitable development. That copper is being mined is reported.

The staple crops are tobacco, wheat, corn, oats and cotton. Sorghum, from which a superior quality of molasses is made, can be easily produced in any locality. The fine grades of yellow tobacco, equal to the best qualities of the golden belt of North Carolina, are made in many portions of the county, and the most remunerative prices are obtained for Mecklenburg brights. The dark and red kinds of tobacco are extensively used by manufacturers for their choicest brands, and the heavy dark for continental shipping. The county ranks as the third tobacco-producing county in the State.

The river bottoms are well adapted to corn, yielding from fifty to seventy-five bushels per acre; the highlands from thirty to forty bushels, with favorable seasons. Improved land will produce from fifteen to twenty bushels of wheat to the acre, and often more. Winter oats succeed wonderfully well when seeded early. Herds and orchard-grass, timothy, clover and most of the domes-

tic grasses flourish luxuriantly on good soils. Those who have turned their attention to making hay for market have met with good success, not only in quantity made, but in prices obtained.

All garden vegetables, berries, melons, Irish and sweet potatoes can be abundantly raised and readily marketed at paying prices. For all crops the lands respond bountifully to the application of well-selected manufactured fertilizers.

Fruits: Apples, peaches, pears, grapes, cherries, strawberries, dewberries, raspberries and blackberries, and all other fruits not strictly tropical, grow luxuriantly and yield regularly and abundantly, there being from eight to ten thousand acres in orchards; also, a very considerable area in grapes.

At least one-half of the county is yet covered with forests, a great proportion of which is second growth, which springs up spontaneously on lands left out of cultivation. The old-field pines appear quickly on abandoned lands and in a few years furnish timber for fencing and farm buildings, and when cleared in the course of years the lands are restored to their original fertility. They seem to be the remedy of nature for the restoration of impoverished soils.

The chief varieties in the forests are the heart pine, hickory, walnut, red, white, black, Spanish, willow and post oaks, elm, dogwood, locust, poplar, maple, birch, beech, mulberry, black and sweet gum. Lumber ranges from \$8 to \$15 per thousand feet. Saw-mills are in nearly every neighborhood. Some of the forests still remain in their primeval state, and as railroad, manufacturing and building demands increase, must at some day become of great value. Immense quantities of hickory logs have been shipped from this county in the last few years to Connecticut, to be manufactured into rims, spokes, hubs and other articles of trade. Virginia hickory is said to be especially valuable on account of its firmness and elasticity.

Among the wild animals are deer and all the smaller varieties. Wild turkeys, partridges and a great variety of small birds are to be found.

The climate is not tropical, but remarkably fine, with perhaps the most uniform seasons and desirable temperature of any of the States. Winter begins about the 15th of December, and its coldest weather is over by the middle of February, and rarely ever very severe. Plowing and other farm work usually progresses all through the winter with scarcely an intermission. As the winters are so short the expense of stock-feeding is comparatively small. Cattle and sheep graze through the winter months. Horses and mules are reared here at comparatively small cost; beef cattle can be profitably grown; hogs and sheep thrive here remarkably well. There are large bodies of pine growth, in which sheep find desirable protection in the winter, and at other seasons of the year good grazing.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,370	\$149,970
Cattle	7,376	47,222
Sheep	3,486	5,066
Hogs	5,793	9,426

The summers, although of long duration, are not oppressively warm, and the gentle breezes greatly mitigate the effects of the heat. There are no tornadoes or cyclones, which sometimes sweep over other sections of the country. Annual average temperature, 58°; rainfall, 42 inches.

The Buffalo Lithia Spring, in this county, has a world-wide reputation as furnishing a mineral water of value in the treatment of dyspepsia, rheumatism and diseases of the urinary organs; and at Chase City a mineral water has been discovered which may prove very valuable.

The health of the county is excellent; the atmosphere is pure and invigorating. Endemic diseases are unknown, nor is it subject to diseases of a violent type. A case of consumption is of rare occurrence. Being midway between Tidewater and the mountains, the diseases which sometimes prevail in those sections are here in the mildest forms. No case of yellow fever or of cholera were ever known here.

The Atlantic and Danville Railroad traverses the county from northeast to southwest, a distance of forty-six miles, giving direct communication with Petersburg, Danville and other cities. The Richmond and Danville branch from Keysville to Durham, N. C., passes from the northwestern to the southern portion of the county *via* Chase City and Clarksville, a distance of about forty miles. Both of these railroads have been constructed within the last seven years. The Roanoke, Dan and Staunton rivers are navigable for small boats or batteaux. A survey of the Roanoke has been made by the United States engineer corps from Clarksville to Gaston, N. C., who reported that it was practicable to make it navigable for steamers. Every portion of the county is afforded transportation facilities. There are a great number of public roads, and in average good condition.

There are three weekly newspapers: *Chase City Progress, Midland Express* and *Mecklenburg News*.

Education is on the free-school system and controlled by the State. Graded and common schools are so situated as to make them accessible from every neighborhood. White and colored have their separate schools. Attendance is voluntary. There is no intermingling of the races in education.

At Chase City is located the Southside Academy, where accomplished instructors furnish higher education and prepare the young for the colleges and different avocations of life. It is an incorporated institution and well equipped to provide the best educational advantages.

Number of public schools, 96—white, 53; colored, 43.

Churches of the Methodist, Baptist, Presbyterian and Episcopal denominations are scattered through the county, seldom more than four or five miles apart, and a very large proportion of the population are members of some denomination. The colored people have their own separate churches and pastors.

Boydton, Chase City and Clarksville are the principal towns, and furnish a ready market for country produce. Their stores and shops are amply sufficient for all branches of trade. These towns have each a population of about 700, and are about twelve miles from each other.

Clarksville and Chase City have large tobacco warehouses, and are splendid markets for the sale of leaf tobacco. Tobacco is always salable at any season of the year and sells for cash. About 5,000,000 pounds are sold at these two markets every year.

MIDDLESEX

Was formed from Lancaster in 1675. It comprises a strip of land about 30 miles in length, with an average width of five miles, lying between the Rappahannock and Piankatank rivers. It contains 80,829 acres of land.

Population, 7,428—males, 3,807; females, 3,657; white, 3,141; colored, 4,317.

The whole county is underlaid with beds of miocene marl, which have been extensively used, with great benefit to the soil. Some of this marl is nearly pure carbonate of lime, analyzing 95 per cent.

It is no longer questionable that the land of this county can be carried to the highest fertility by the use of these marls, using clover and cow-peas, which here grow luxuriantly, in a proper rotation of crops. Wheat, corn, oats, hay and trucks are the regular crops. Peaches, apples, grapes, apricots, pears and the smaller fruits and berries do well.

On the rivers the elevation of the land is from ten to thirty feet above tide-water—a mile or two back it rises to a hundred feet or more. The soil, varying in texture from sandy loam to the stiffest clay, is well drained, easily tilled, productive, and very improvable. Being very convenient to market (there are lines of fine steamers on both rivers bordering the county—time to Baltimore, eight hours, and freight low), Middlesex offers great inducements to truckers, fruit-growers and farmers.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,211	\$50,575
Cattle	2,585	23,024
Sheep	1,089	2,167
Hogs	3,079	4,867

Spring lambs are profitable; poultry raising has increased, and is profitable. There is one large poultry establishment at Saluda and several smaller ones in the county.

Fish and oysters abound. There are several oyster and fish canneries and several fish fertilizer factories in the county. At least a hundred pounds and weirs are used catching fish, and there are two factories for fish guano and several fruit and vegetable canneries.

The wild animals comprise gray foxes, raccoons, opossums, squirrels, hares, otters, musk-rats and some deer.

Among the fowls and birds can be found wild turkeys, geese, ducks and most water fowls, partridges, robins, blackbirds, mocking-birds, larks, plovers and most of the small farm birds; also bald and gray eagles, fish and other hawks, crows, etc.

Society is good, and the people will welcome immigrants. Lands are yet low-priced, but rising in value.

The public roads are level and easily kept in order, and the county will compare favorably with any Tidewater county.

Timber is abundant, cheap and of excellent quality, and there are many steam and water mills in the county. In colonial times there were potteries here, there being beds of fine potter's clay.

Number of public schools, 28—white, 15; colored, 13.

Rate of county tax same as the State, 40 cents on \$100 of real and personal property.

There are twenty-six churches in the county—Baptist, 17; Methodist, 6; Episcopal, 1; Disciples, 1; Union Baptist, 1

Average temperature about 57°; average rainfall about 45 inches.

MONTGOMERY

Was formed in 1776 from what was then called Fincastle district. It is about twenty-two miles on each of its irregular sides, and contains 239,032 acres of land. Population, 17,742—males, 8,968; females, 8,774; white, 14,227; colored, 3,515.

Montgomery enjoys a delightful and healthy climate, and is a most desirable part of the great Valley of Virginia.

The surface is rolling in the central and southern portions, and mountainous in the northern and western parts. The soil is a rich limestone, well adapted to grain and tobacco and all the grasses grown in Virginia; so that for grazing and stock-raising it is unsurpassed. Much fine bright tobacco is produced and brings high prices.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,123	\$134,618
Cattle	7,769	96,698
Sheep	6,396	11,291
Hogs	4,954	7,669

It is drained by New River and the head-waters of the Roanoke, which are utilized to a considerable extent in manufacturing enterprises of various kinds.

Timber is abundant—oak of different varieties, chestnut, walnut, hickory, elm, poplar, etc.

The minerals found here are iron ores, gold, galena, zinc, copper, manganese, coal, slate, millstone and limestones. Much of this mineral wealth is now being developed and gives employment to capital and labor. Discoveries of gold have created much excitement, and there have been several sales of mining properties at high figures. There are three mineral springs in the county—the “Montgomery White Sulphur,” the “Alleghany Springs” and the “Yellow Sulphur Springs,” near the Norfolk and Western Railroad, all watering-places of great repute.

A limestone found between Blacksburg and Christiansburg is reported to contain fifty-six per cent. carbonate of lime, thirty-five carbonate of magnesia, and believed to be hydraulic. Some of the coals of this county are very valuable. Iron, coal, gold and lead mines have been developed. Only iron and coal are now being worked.

The Norfolk and Western Railroad passes through the centre from northeast to southwest; a branch road from the Norfolk and Western runs along the west line a short distance on its route to the Pocahontas coal mines, in Tazewell county.

Churches of all the denominations are abundant, and private schools are of the best class.

Number of public schools, 108—white, 90; colored, 18.

Christiansburg, the county-seat, is a thriving town of 1,400 inhabitants. The Virginia Agricultural and Mechanical College is located at Blacksburg, in the midst of a fine farming country, surrounded by varied and beautiful scenery.

This institution is doing an admirable work in educating the young men of this and other sections of the State. (See "Education" in another part of this book.)

County taxation: Levy for county purposes, 50 cents on \$100 worth of property; for the poor, 30 cents; total, 80 cents.

NANSEMOND

Lies on the west side of Norfolk, and, like that county, extends from the North Carolina line to Hampton Roads, being, in round numbers, thirty miles long by nineteen wide. It is watered by the Nansemond River and other streams running into the James, and by tributaries of the Blackwater. Number of acres of land, 259,394. Population, 19,692—males, 9,962; females, 9,730; white, 8,925; colored, 10,767.

The surface of Nansemond is nearly level—the soil a friable, sandy loam, a description of land now considered the best for general purposes, the most profitable to work on account of economy of cultivation and adaptability to a great variety of crops. Marl is abundant in the county, and is much used.

This is the great peanut section of the United States, and as lime is a necessity in the production of peanuts, this marl is very valuable, furnishing lime of excellent quality and in proper condition "on the hill."

Peanuts and cotton, corn, oats and vegetables of all sorts (truck) are the principal products of this thriving county. A large portion of the land is devoted to "trucking." Fine tobacco, which has been but is not now cultivated, would grow well on the thinnest clay lands if fertilized, and the productions of this county would cover all the crops of the middle of the temperate zone, from cotton to potatoes and cabbage.

The potatoes of Nansemond have long been celebrated, and other vegetables grow in equal perfection and ripen early, especially melons, peas and tomatoes. Onions from the seed could, and will some time, be a large and profitable crop. No section is better suited to their production.

Much of the time and capital of the farmers of this county is devoted to trucking and market gardening. It has its own thriving little city, Suffolk, and Norfolk, Richmond and the Northern markets for all its products. The result is that many of the farms look like an aggregation of gardens.

Fish and oysters abound, and can be easily and cheaply transported east, west, north and south of the county.

LIVE STOCK

	Number.	Value.
Horses and mules	2,888	\$134,266
Cattle	3,164	22,387
Sheep	482	580
Hogs	6,958	11,188
Goats	718	409

Poultry raising is increasing and is profitable.

There is yet much fine timber in this county, mostly pine, cypress and juniper, and all that is available is being profitably marketed. Nansemond's interest in the Dismal Swamp renders a lumber famine in her borders impossible.

The wild animals are mainly found in or near the Dismal Swamp, and are bears, wild-cats, deer, foxes, raccoons, opossums, otters, musk-rats, squirrels and hares.

Wild fowl: Ducks, geese, swans, teal, in the waters; woodcock, snipe, sora, reedbills, in the marshes; and partridges, doves, larks, plovers, robins, black-birds, etc., in the fields. Eagles, hawks, crows and owls are among the predatory birds.

Suffolk, the county-seat, is a busy and thriving town, the centre of a large local trade. It is connected with Norfolk and Portsmouth by railroads and by river navigation, and is the terminus of the Suffolk and Carolina Railroad. It has, by the census of 1890, 3,354 inhabitants. It is the seat of great lumber interests, both manufacturing and shipping.

Number of public schools, 69—white, 41; colored, 28.

Easy access to market is furnished by the Nansemond River and the steamers plying thereon, and by railroads to Norfolk and Portsmouth (the Norfolk and Western and the Seaboard and Roanoke), and from these cities there is cheap and quick transportation daily to the great markets of the Northern cities.

Churches are abundant and well attended, all denominations being represented.

Weather report for 1892, ending December 1st: Average annual temperature about 58°; average annual rainfall about 46 inches.

This is one of the most prosperous counties in Virginia, the people being industrious and ready to avail themselves of the many natural advantages with which Nansemond is blessed.

The county taxes are very low—20 cents for county and 5 cents for schools on the \$100 worth of real and personal property.

NELSON

County extends from James River on the southeast to the summit of the Blue Ridge on the northwest, and lies between Amherst and Albemarle counties on the southwest and northeast. Area, 288,127 acres. Population, 15,356—males, 7,465; females, 7,871; white, 9,033; colored, 6,303.

The county is well watered, having the James washing its whole southern border, besides the Tye, Rockfish, and their tributaries. These, with the James, along which are numerous solid masonry dams, formerly used by the old canal company, afford an extraordinary amount of water-power, some of the sites possessing advantages equal to any in the State. A branch of Tye River forms the famous cataract, the Crab-Tree Falls. (For description see "Natural Curiosities" in this volume.)

The surface of the county is rolling, and is crossed by numerous small rivers, creeks and branches. Fresh water is everywhere abundant. The water is mostly freestone, but iron and sulphur water is found in various parts, especially in the uplands along James River. One of the oldest and most celebrated chalybeate springs in the State, endorsed by the medical profession nearly 200 years ago, is in this county, and has been in one family over 100 years.

The soil of Nelson is exceedingly fertile where it has not been too much impoverished by over-cultivation, and even these lands are capable of high improvement at slight expense. The soil is especially suited to the growth of fine heavy tobacco, corn wheat, oats, grasses (clover and timothy mostly), ry, buckwheat, barley, peas and beans. Tobacco is the money crop of most farmer

All kinds of fruits and garden vegetables do well that are found in this latitude anywhere in the world. The Albemarle pippin grows here just as it does

in its native county, and the Pilot, believed to be a seedling of that famous apple, is a native of Nelson, and the original seedling was alive on Pilot Mountain a few years since.

Grapes flourish in this county to perfection, and in the last few years great attention has been paid both by natives and foreigners to the cultivation of grapes and winter-keeping apples, and the results have been most gratifying. There are several large vineyards in the county and some wine-cellars.

Cattle and sheep raising are receiving considerable attention, and pay well.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,579	\$109,125
Cattle	5,898	55,812
Sheep	19,779	4,060
Hogs	2,540	4,445

Poultry is extensively and profitably raised.

About one-half of this county is in the original growth, which consists of white oak, pine (white and yellow), Spanish oak, black oak, red oak, hickory, walnut, chestnut, etc., in great abundance, and also other rarer trees, such as ash, gum, sycamore, cherry, locust, in small quantities. There are a number of saw-mills, and tan-bark and cross-ties add to the forest product. There are ten flouring mills, the Tye River woollen mill and three tanneries.

The minerals of the county are manganese (which has been largely mined at Midway Mills and Warminster), rutile, copper (green and blue carbonates), garnet, ochre, kaolin (in immense beds), iron—hematite, specular and magnetic. The Greenway mines have been largely worked and the ore analyzed 65.14 metallic iron, 0.029 phosphorus. Hematite at "Sleepy Hollow" mines analyzed 53 per cent. metallic iron. A copper mine was worked near Norwood, on the Richmond and Alleghany Railroad. These metallic resources are destined to large developments under more favorable auspices than now exist.

The county is penetrated by the Virginia Midland Railroad running through its whole width, and the Richmond and Alleghany (now the James River division of the Chesapeake and Ohio) Railroad skirts its entire river border. The Chesapeake and Ohio Railway touches the northern corner.

County taxation is at the rate of 60 cents on the \$100 value of real and personal property, one-third of which is for county school purposes.

Livingston, a village of 300 inhabitants, four miles from the Virginia Midland Railroad, is the county-seat, and is the largest place in the county. It is 145 miles from Washington.

The *Nelson Examiner* (weekly) is published here.

Running from the top of the Blue Ridge to James River, with large forests on each boundary, Nelson is fairly stocked with deer and foxes (red and gray), and bears and wild-cats are still found, while raccoons, opossums, ground-hogs, hares and squirrels are plentiful. Wild turkeys, pheasants, partridges, doves, larks, robins, woodpeckers, and nearly all birds common to Virginia are found in the forests and fields; and it has among the predatory birds the owls and hawks of various species, the raven, buzzard and crow. On the rivers may be found wild ducks, cranes and occasionally transient wild geese.

There are several excellent private female schools, and the public-school system is efficiently conducted. There are 98 public schools—68 white and 30 colored.

There are 8 Methodist, 11 Baptist, 6 Presbyterian, and 3 Episcopal churches.

Average annual temperature for 1892 to December 1, 55°; average annual rainfall about 40 inches.

NEW KENT

Was formed in 1854 from York. It is twenty-six miles long and seven to nine miles broad, and contains 129,609 acres of land. Population, 5,511—males, 2,905; females, 2,606; white, 1,956; colored, 3,555.

This county, lying between the Pamunkey, York and Chickahominy rivers, has extensive and fertile bottom lands, with navigable streams on two sides.

The soil is light and sandy in the interior, and varies from sandy to stiff clay on the river bottoms, and is easily improved by clover or peas in proper rotations.

The productions are corn, wheat, oats and early vegetables and potatoes (both sweet and Irish), for which latter the soil is well suited. Trucking and poultry raising have increased and are profitable.

LIVE STOCK.

	Number.	Value.
Horses and mules	916	\$39,049
Cattle	1,701	14,965
Sheep	687	1,381
Hogs.	1,793	3,084

Wild animals: Deer, foxes, hares, squirrels, raccoons, opossums, otters, muskrats, etc.

Wild fowl: Turkey, duck, goose, blue pullet, etc.

Wild birds: Partridge, dove, lark, woodcock, snipe, sora, pigeon, robin, black, red, blue, mocking and catbird, sparrow, martin, etc.

Predatory birds: Eagles, owls, hawks of all varieties, and crows. One of the largest eagles ever seen in this country was killed this year in New Kent.

Marl is abundant and of excellent quality. That near St. Peter's church contains about ninety per cent. carbonate of lime, and has been successfully used on the lands and even for mortar in laying bricks.

Valuable green-sand marl is found on the Pamunkey, and many lands have been kept up in fertility by its application.

The timber consists of oak, hickory, maple, dogwood, pine and other valuable trees. Much cord-wood and ship timber is annually marketed from this county.

Two railroads furnish added facilities for access to market. The Richmond and York River Railroad on the north, and the Chesapeake and Ohio Railway in the southern part, are of convenient access to all parts of its territory, and bring it into close connection with all the trade centres of the country.

Providence Forge, at the head of Chickahominy navigation and on the Chesapeake and Ohio Railway, is a thriving village in a fertile valley, and well located for a considerable town. It has good water-power.

It is a healthy county, with the exception of mild types of intermittent fevers, easily controlled.

Lands can be cheaply bought, the price varying from three dollars to twenty dollars.

Rate of county taxation: 50 cents for county purposes; 15 cents for schools, and 15 cents for roads, making 80 cents on the \$100 value of real and personal property.

The people are intelligent and cultivated, and are noted for their generous hospitality and sociability.

Number of public schools, 25—white, 14; colored, 11.

Churches are conveniently located over the county, and most of the denominations have houses of worship.

NORFOLK

Was formed in 1691 from Lower Norfolk. It is twenty-four miles long, with a mean breadth of nineteen, and stretches from the North Carolina line to Hampton Roads on the north, with Elizabeth River and its branches penetrating every part. In the southwestern corner, partly in this county and partly in Nansemond, is the celebrated "Dismal Swamp," which, lying higher than the surrounding country, furnishes an abundant supply of the purest water, which can be carried to the cities of Norfolk and Portsmouth.

This large, and to a great extent undeveloped, if not unexplored tract of land, is covered with the most valuable timber. Pine, cypress, cedar, juniper and gum of wonderful value, interspersed with the oaks and other hard woods, are all around a navigable lake or bordering outlets into the waters at Norfolk. When cleared of timber, and where necessary drained in the simplest manner, these lands exhibit the greatest fertility. It is doubtful if any land in the United States can excel the Dismal Swamp in the production of corn and potatoes.

The population of Norfolk county, including Norfolk city and Portsmouth, was in 1880, 58,942, but has much increased since. It is now 77,038—males, 38,235; females, 38,803; white, 37,497; colored, 39,571. Number of acres of land, 229,647.

The surface of the county is level, the soil a sandy loam with clay subsoil. Nature seems to have designed it for a great garden, and it is rapidly being utilized in that way. Gardens and trucking farms are spreading in every direction around Norfolk and Portsmouth—soil, climate, market facilities, all concurring to give an unexampled impetus to the trucking business. Other crops can be raised—corn, oats, peanuts and other field crops—but market gardening is found so much more profitable that all energies are being applied in this direction. Communication with all the great cities north of Virginia is now rapid and easy, and freights are cheap. The New York, Philadelphia and Norfolk Railroad, shortening the time to the great markets by five hours, has given a great impetus to market gardening. Early vegetables and strawberries of the finest quality are shipped in immense quantities and bring a large amount of money into this county and those adjacent. Perishable fruits and vegetables can be gathered in the evening and placed in the New York market by sunrise next morning.

By the census of 1880, Norfolk headed the list of counties in the production of Irish potatoes. Lands are rapidly rising in value, and already high in the vicinity of the cities.

Norfolk is celebrated for the excellence and quantity of the oysters and fish brought to its market, and for the abundance of game.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,496	\$197,331
Cattle	1,939	25,417
Sheep	751	1,106
Hogs	2,816	6,657

Public schools: The county of Norfolk has 80 public schools—white, 40; colored, 40. Portsmouth has 22—white 15; colored, 7.

Norfolk and its twin sister, Portsmouth, are rapidly growing in importance. Lines of steamers to Baltimore, Philadelphia, New York and Boston, besides those running inland to Richmond, Smithfield, Newport News, and those across the bay to Cherrystone and Cape Charles City, and by the canal to Currituck, throng the fine harbor. The foreign trade of Norfolk, too, is considerable, and increasing, as Norfolk has become a great cotton port—the third in the Union. (For full description and statistics, see titles "Cities" and "Transportation.")

The Norfolk and Western Railroad, the Seaboard and Roanoke, and the Norfolk and Carolina railroads terminate here, and the railroads to the popular sea-bathing places at Ocean View and Virginia Beach have made these places easily accessible and draw great numbers of people to Norfolk.

The city of Portsmouth is a port of entry and the county-seat of Norfolk county. It is situate on the west bank of the Elizabeth River, opposite the city of Norfolk, with which it is connected by a steam ferry. It is the terminus of the Seaboard and Roanoke Railroad, whose building and repair shops are just without the city limits.

Portsmouth is on level ground and is regularly laid out. The streets, for the most part, are wide and straight, and they are, in general, well paved. The buildings are substantial, and many of them are of modern design.

The business is principally retail, but considerable wholesale trade is done in groceries, lumber and staves. The packing and shipping of oysters is an industry employing a large number of hands and involving considerable capital.

Being situated in the centre of the garden truck-growing district of Virginia and near the sea, the markets are abundantly supplied with table delicacies from the land and the water, making the cost of living quite moderate.

The harbor is one of the best on the Atlantic coast and is accessible at all seasons of the year to vessels of the largest class.

Lines of steamers run to Boston, Providence, New York, Philadelphia, Baltimore, Washington, Richmond, and also to points south, and the city is connected by a railway system with the principal cities in the United States.

The health of Portsmouth is remarkably good. The percentage of pulmonary diseases is very small, and the mortality record shows a smaller death-rate than that of most of the cities on the Atlantic seaboard.

In the southern part of the city is a United States navy-yard—one of the largest and best equipped navy-yards in the country—where employment is afforded to a large number of mechanics and clerks.

A great naval station and dry-dock of the United States is located here, and the largest ships can be accommodated in this fine harbor and dock. (For statistics, see titles "Cities" and "Transportation.")

The enterprise and public spirit of the people have kept pace with the development of their resources and of their commerce. Fine shell roads, radiating in

sundry directions from Norfolk, have superseded the dirt roads that were used a few years ago.

No part of the country offers a more inviting field to enterprising and industrious settlers than does Norfolk county.

A correspondent sends a good description of Norfolk county.

This county is situated immediately on Hampton Roads, and occupies the entire basin of the Elizabeth River and its many navigable branches. It contains about five hundred square miles and a population of thirty thousand, exclusive of the cities of Norfolk and Portsmouth, both of which are in its geographic limits.

Its people are generally native Americans—mostly Virginians and Carolinians, with a good sprinkling of Northern and Western men settled here since the war between the States. In religion they are mostly Methodist and Baptist, there being many churches for whites and about an equal number for the colored.

This county is noted for the variety and fertility of its soil, and its adaptation to fruit and all kinds of farm and garden productions grown in this latitude. The northern and middle sections are especially adapted to the growing of trucks or garden vegetables and small fruits. This industry has grown in the last few years to immense proportions, as is demonstrated by the fact that about five million dollars' worth of truck—including potatoes, cabbage, kale, peas, beans, beets, squash, cucumbers, melons, pears, berries, etc.—are annually shipped from Norfolk to Northern and Western markets, and a very large proportion of these are grown in this county.

NORTHAMPTON

Occupies the southern end of the Eastern Shore peninsula. It is thirty miles long, with an average width of only about five miles, and contains 113,255 acres of land. Population, 10,318—males, 5,231; females, 5,082; white, 4,833; colored, 5,480.

The soil is a sandy loam with a sandy clay subsoil—sufficient clay to hold manure and sufficient sand for drainage. The land has been worn but responds readily to improvement; in fact, the yield from a light manuring is surprising. The crops principally cultivated are corn, potatoes, both sweet and Irish, and onions; and since the opening of the railroad, peas and berries. The county is well adapted to general trucking and fruit culture. The largest and one of the most successful truck farms in the State is located at Cape Charles. Gross sales of trucks from this farm for one year have reached \$80,000. This farm was owned by the late William L. Scott, of Pennsylvania, and is now cultivated by his family.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,464	\$119,101
Cattle	2,791	20,808
Sheep	1,644	2,553
Hogs	5,169	9,562

The climate is temperate, the almost insular position giving Northampton an exemption from violent extremes of heat and cold. For the past eighteen years the mean annual temperature has been 58° 48'; and the mean rainfall 43.58 inches. This weather record was for 1886. The State Department of Agricul-

ture has a weather station at Cape Charles and at Bird Nest, in this county. Bird Nest reports average annual temperature 58.1° ; annual rainfall, 46.80 inches; average monthly, 3.90 inches. Cape Charles, for eight months to September 1st, gives annual temperature 55.1° ; rainfall, 45.84 inches.

Black and English walnut and pecan grow and bear well here.

This county being below the isothermal line of 60° , olives, figs, pomegranates and the Scuppernong grapes have fruited here.

The southern terminus of the great railroad, connecting with Philadelphia and New York, is in this county, at Cape Charles City on the Chesapeake Bay, where a steam ferry connects with Norfolk and the South, and a great impulse has been given to agriculture, and trucking in particular, by the facilities afforded by the railroad, which passes through the middle of the county for about twenty miles. Two crops have been greatly increased by the facilities furnished by this road—to-wit, sweet and Irish potatoes.

Northampton is reported as producing the largest crop of onions in the State to the acre—to-wit, nine hundred bushels.

All the farms are within a short distance of a railroad depot or a water-course, making the transportation to market easy and convenient.

Fish, oysters and wild fowl form a source of cheap and luxurious living, and large revenues to the inhabitants of these counties. There is no part of the country cheaper to live in than this. About one-fifth of the population of the Peninsula is engaged in planting oysters and fishing, from which a good living is easily made.

Wild fowls are abundant. Ducks, geese, brant, in all their varieties, furnish sport and profit for the hunter. In addition to the woodcocks, partridges, snipe, gulls, curlews, etc., eagles and hawks pass along the coast; while in the fields and forest mocking-birds, catbirds, larks, doves, sparrows, etc., are found.

Foxes, otters, raccoons, musk-rats, opossums and hares are among the wild animals.

Churches are numerous and public schools are convenient. Number of public schools, 33—white, 21; colored, 12.

The county roads are well located and naturally good, and in many places are being considerably improved.

County taxes: For county schools, 5 cents on \$100 value of property; district schools, 15 cents; public roads, 5 cents; county levy, 20 cents; total, 45 cents.

NORTHUMBERLAND

Is one of the five counties constituting the "Northern Neck," which lies between the Potomac and Rappahannock rivers and Chesapeake Bay. Northumberland county was formed in 1648. It is twenty-five miles long and about seven to eight miles wide, and contains 118,197 acres. Population, 7,885—males, 4,065; females, 3,820; white, 4,795; colored, 3,090.

The surface is mostly level. The soil on the streams is a sandy loam, with clay subsoil, and is very well adapted to wheat. The ridge lands have a light soil, and are generally thin, but easily improved. The farm crops are corn, wheat, oats and green vegetables for city consumption.

A correspondent in this county writes, September 3, 1886: "Our lands produce clover luxuriantly. Recently the farmers have been saving clover seed,

and there will be as much as twenty-five hundred or three thousand bushels of seed saved this season."

There are valuable fisheries in this county. "Fish-chum," or the refuse from fish-oil factories, is largely used as a fertilizer here, as well as in many other counties of this section, especially on wheat, with marked benefit. There are at least 700 hands engaged in the fish business. "Fish-chum" is shipped to Charleston and other places for making fertilizers. There are also several fertilizer manufactorys in the county (which incorporate the phosphate rock with "fish-chum"), with expensive steam machinery.

There are two marine railways on Wicomico River, where vessels are built and repaired with dispatch. Many hands are employed and a large capital invested in these enterprises.

Almost every part of the county is accessible to water transportation by the creeks and estuaries from the bay and Potomac, and the projected railroad from Richmond, the "Richmond and Chesapeake," is to have its terminus in this county, near the estuary of the Potomac. The cities of Alexandria, Georgetown and Washington are largely supplied from this county with melons, fresh vegetables, oysters, fish, wild fowl and poultry.

Eight hundred to one thousand barrels of eggs and large quantities of turkeys are annually sent to market. Farmers are generally out of debt. The county levy is very low. This is a fine part of Virginia, and offers pleasant homes and good inducements to immigrants. Such was the report from this county in 1886.

Live stock, as reported for 1892, is as follows:

LIVE STOCK.		Number.	Value.
Horses and mules.....	.....	1,604	\$69,294
Cattle.....	.....	4,204	41,834
Sheep.....	.....	1,827	3,804
Hogs.....	.....	4,083	6,882

Poultry in good condition and the business profitable.

Number of public schools, 38—white, 26; colored, 10.

Churches of the various denominations are conveniently located in the county.

Rate of county taxation: Capitation tax, 50 cents, and about 40 cents on the \$100 assessed value of real and personal property for all purposes.

NOTTOWAY

Was formed in 1788 from Amelia. It is twenty miles long by about twelve miles in width, and contains 224,966 acres of land. Population, 11,582—males, 5,753; females, 5,829; white, 3,959; colored, 7,623.

The principal crops are tobacco, wheat, corn and oats. The tobacco of this county is noted for its excellent quality.

The timber consists mostly of oak, pine, hickory, maple, walnut, beech, poplar, ash, gum, cedar and dogwood.

Mica, steatite, kaolin, and granite are found in this county, but have not as yet been developed.

This was formerly a very wealthy county, and contained a larger population of blacks than any other in the State—about five-sevenths of the whole, or two

and a half blacks to one white. Consequently there has been a great shrinkage of value in real estate, and there is an excellent chance to buy fine lands in this and other counties of the "black belt" at a low price. It is watered by Nottoway and Little Nottoway rivers and by some of the tributaries of the Appomattox.

In this county, as in many other counties of Southside Virginia, many valuable tracts of land can be bought for a trifle. Farms with buildings and reasonable improvements, if cultivated fairly, can be paid for with one year's crop, often with one crop of tobacco. In the "good old times" large crops of wheat were made in this county, as the following quotation shows:

"Colonel Knight made in Nottoway county 675 bushels from seven and a half bushels broadcast, following tobacco, on good land, or 45 bushels to the acre. This was in 1842."—*Southern Planter*.

Blackstone is the largest village in the county. Beginning at the close of the war with one shanty for a storehouse, it now has over twenty stores and shops, one bank, one fertilizer factory, one bark, sumac and grist mill, one tobacco factory, two tobacco warehouses, three churches, public school building, etc. It ships more produce on the Norfolk and Western Railroad than any station between Petersburg and Lynchburg.

Since this extract from the Hand-Book of 1886 was compiled, Blackstone has grown and increased in prosperity, and bids fair to become an important inland town. There is published an active and useful newspaper in this town, which has a good circulation.

LIVE STOCK.		Number.	Value.
Horses and mules		1,201	\$56,669
Cattle		3,803	31,089
Sheep		1,348	2,511
Hogs		2,842	5,145

The county rate of taxation is 35 cents on \$100 valuation of property for county expenses, 10 cents for county schools, and 10 cents for district schools.

Burkeville is a thriving village, located in the western part at the intersection of the Norfolk and Western and the Richmond and Danville railroads. These two railways entering the county, one on the western and the other on the northern border, afford convenient transportation to most of its territory.

Number of public schools, 50—white, 27; colored, 23.

Churches of all denominations are abundant.

Average temperature, 58°; average rainfall, 42 inches.

ORANGE

Was formed in 1734 from Spotsylvania. Its greatest length is thirty-eight miles; the width varies from five to fourteen miles. Population, 12,814—males, 6,118; females, 6,698; white, 8,573; colored, 6,241. Area, 213,007 acres. It is abundantly watered by the Rapidan and North Anna rivers and their tributaries.

The surface in the eastern part is beautifully undulating; the central and western portions have hills and mountains of gentle elevation, covered to their tops with forests of valuable timber, and farms of unsurpassed beauty and productiveness.

The soil is mostly a dark red clay formed from ferruginous and calcareous rocks, and is very fertile, producing large crops of grain and grass and some tobacco. As a grass-growing and grazing county, this should yield precedence to no other.

The general system of farming is progressive, and the adoption of the "diversity of production" is meeting with general favor. The raising of small fruits for the Northern markets is a rapidly-increasing and profitable industry. Thirty thousand pounds of table-grapes were shipped one season from one express office. In 1888 vineyards were reported as covering three hundred and forty acres, and 80 per cent. was made into wine.

The rearing of thoroughbred stock is extensively carried on by careful and intelligent farmers.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,101	\$158,888
Cattle.	7,868	82,896
Sheep	5,099	18,158
Hogs.	5,978	11,452

The timber consists of large growths of the various kinds of oak, hickory, pine, chestnut, poplar and sycamore.

The wild animals are deer, foxes, hares, raccoons, opossums, ground-hogs, squirrels, minks, weasels, musk-rats, etc.

Wild fowl: Turkeys, pheasants, ducks and cranes.

Predatory birds: Eagles, owls, hawks and crows.

Other birds: Partridges, larks, doves, plovers, woodpeckers, blackbirds, blue-birds, redbirds, mocking-birds, catbirds, jaybirds, robins, martins, swallows, sparrows and many others.

Iron ores (red and brown hematite and magnetic) are abundant and rich. Limestone (some of it hydraulic) and marble are found at the base of the Southwest Mountains. Gold-bearing quartz, asbestos and fire-clay are found in Orange. Iron was mined at one time, and gold has been successfully worked at different times.

The railway facilities are excellent, and are furnished by the Chesapeake and Ohio, Virginia Midland and Orange and Fredericksburg railroads, which are located in such a manner that all parts of the county are convenient to one or another of them.

Gordonsville, near where this county corners with Louisa and Albemarle, at the junction of the Chesapeake and Ohio and one branch of the Virginia Midland road, is the largest town. Orange, the county-seat, is a small town on the Virginia Midland, at the point of junction of the Fredericksburg Narrow-Gauge road.

The public schools, supplemented by numerous private schools, afford abundant educational facilities. Number of public schools, 64—white, 38; colored, 26.

Churches of the different denominations are conveniently located.

A local correspondent gave the following as a fair description:

"Orange county, one of the central districts of Piedmont Virginia, embraces all of the advantages conceded to that favored section, viz.: great diversity of agricultural production, abundant pure spring water, embracing numerous chalybeate springs, freedom from malaria, pure mountain air, and ready access

to the best markets. The Southwest Mountain range, traversing the entire length of the county, defining the line between the red and gray lands and forming the water-shed to the Rapidan on the northwest and the North Anna River on the south, gives the elevation which, with the deep soil and natural drainage, renders this section, embracing more than half the area of the county, peculiarly adapted to the growth of grapes, apples, cherries, and all the standard varieties of fruit, and as grazing lands, especially for sheep, second to none outside of the blue-grass region. As evidence of the adaptation of this section to general stock-raising, statistics show more pure-bred stock, embracing representatives of nearly all the leading breeds of cattle, sheep and hogs, exhibited at the Virginia State Fair from this county than from any other in the State. The average production per acre of the staple crops is of wheat, 15 bushels; oats, 20 bushels; corn, 30 bushels; tobacco, 800 pounds. Land can be bought at from \$10 to \$40 per acre, and settlers are cordially welcomed."

County taxation: For county expenses, 40 cents on the \$100 worth of real and personal property.

PAGE

was formed in 1831 from Shenandoah and Rockingham. The whole county is a valley thirty miles in length and about eleven miles wide, with the Shenandoah River running through its entire length, and contains 174,572 acres.

Population, 13,092—males, 6,486; females, 6,606; white, 11,320; colored, 1,772.

The surface of the broad and fertile valley is gently undulating, and rises gradually to the summits of two low mountain ranges, which form its east and west borders, the Blue Ridge on the east and Massanutton on the west.

Bears, deer and wild-cats are found on the mountains, and raccoons, foxes, opossums, squirrels and hares are plentiful.

The hunter can find wild turkeys, pheasants, wild ducks, partridges, woodcock and snipe, and naturalists will find the dove, lark, robin, mocking-bird, thrush, redbird, bluebird, jay, oriole and all other smaller birds.

The soil is a rich limestone of unsurpassed productiveness, admirably suited to grain and grass.

The average yield of wheat for the entire county is about fifteen bushels, the better lands producing twenty-five to thirty-six. The average for corn is about thirty-five bushels, the highest yields in good seasons reaching seventy-five.

There are about twenty-five grain mills in the county.

Farming lands along the streams are held at \$20 to \$100 for entire tracts. The better class of farmers have been very prosperous since the war, until the recent decline in the price of wheat and cattle, as shown by their improved barns and dwellings, some of the latter being handsome structures in modern style.

There are many agricultural societies, clubs, granges and alliances in the county.

LIVE STOCK.

	Number.	Value.
Horses and mules.	2,956	\$129,599
Cattle.	6,038	58,648
Sheep.	1,827	4,991
Hogs	4,879	8,093

Dairy and poultry products have largely increased, and both are profitable.

Farm hands are paid eight to twelve dollars per month and board. Occasionally day laborers on farms are paid seventy-five cents per day. The supply of labor is ample, white and colored. The hotels, boarding-houses, tannery, iron works and mines consume most of the surplus products of the henry, dairy and garden.

Valuable timber of many kinds, as oak, pine, locust, chestnut, walnut, ash and poplar is abundant. There are a large number of industries, mills and manufactories connected with lumber, and timber, and bark, and several tanneries and leather works. There are fifteen saw-mills now working, and walnut, oak, ash, pine, hickory, poplar and cedar are utilized.

The minerals are iron ores, in vast quantities, ochre, manganese, copper, limestone, some of it magnesian, and travertine marl. There are a number of mineral works and iron manganese and ochre are now worked.

Page county is traversed in its entire length by the Shenandoah Valley Railroad, which runs through the centre and affords transportation, convenient to all parts of the county. Since the construction of this road the development of the county has been very rapid. Public roads are fairly good, but not so good as they might be made in this limestone valley.

Rate of taxation for county purposes, not including schools, is 25 cents on the \$100 value of property.

Luray, the county-seat, is a beautiful town, and one of much commercial importance, being the emporium of this rich Page Valley, and on the line of the great Shenandoah Valley Railroad.

Number of public schools, 67—white, 63; colored, 4.

There are in the county a number of chalybeate and sulphur springs. The county is free from malaria, and its general healthfulness admitted. Luray is becoming a summer resort for city people. The Luray Inn and Hotel Laurence afford accommodations not surpassed anywhere in this country. The Inn, built in Queen Anne style, is especially attractive to persons of means. The average annual temperature is about 53°. The rainfall at Woodstock, in the adjoining county, was 34.98 inches, with three very dry months.

Near Luray is a beautiful cave with an endless succession of extensive chambers ornamented with numerous stalactites and stalagmites. This is numbered among the noted caverns of the world, and attracts from all parts of the country thousands of visitors curious to examine its wonders, which surpass those of any other known to man. It is now fitted up with electric lights and all conveniences for exhibition. (See "Natural Curiosities.")

PATRICK.

This is the extreme southwestern county of the Piedmont section. It borders on the North Carolina line. Until very recently it was cut off from the world, having no means of communication except the ordinary dirt road. Its area is 349,776 acres.

The lands are watered by the Dan, and Smith's River, a large tributary to the Dan, and other streams. A part of this county is hilly or semi-mountainous, but there is a large plateau called "The Meadows of Dan," which is well adapted to grass. Population, 14,147—males, 6,965; females, 7,182; white, 12,079; colored, 2,068.

Most of the lands of this county produce fine crops of corn, wheat, rye, oats, potatoes (Irish and sweet), tobacco, and grass making a superior hay. Much of the land is fertile and brings fine corn, some as high as fifty bushels to the acre. Buckwheat grows and yields abundantly. As to vegetables, they grow in almost perfection—turnips, cabbages, onions, parsnips, carrots, squashes, etc.

In this county are considerable tracts of land in primitive forest which is for sale, and would bring as fine tobacco and wheat as ever grew anywhere.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,762	\$70,073
Cattle	6,980	52,354
Sheep	3,599	3,607
Hogs	6,353	7,018

The county is also famous for apples and the abundance of small fruits which grow wild. At the exhibition in Washington of the American Pomological Society, a citizen of Patrick county received a bronze medal for a seedling apple exhibited.

In 1886 a correspondent wrote: "Fruits grow and mature finely here. We have very fine apples, in endless variety, ripening from June to November. Now, while I write, August 24th, I hold in my hand a sound apple, grown in 1885, and kept in open air through winter, spring and summer. Peaches do well, all that is needed being to destroy the worm which bores in the roots and kills the trees at three or four years old. Cherries are very fine. Grapes grow luxuriantly in almost all parts of the county; the native grape, without any attention, grows abundantly, and almost any of the improved grapes, when cultivated, do remarkably well. I have tried the Delaware, Isabella, Catawba, Norton's Virginia, and have seen several other kinds growing and bearing luxuriantly and abundantly."

The timber of this county is very abundant and of fine quality. There are twenty-two saw-mills working oak, maple, poplar, walnut and hickory.

All the wild animals and forest fowls and birds found in any Piedmont county will be found in Patrick.

The minerals are iron—of the finest quality—lead and silver. During the war this iron was worked by the Confederate Government. The value of the minerals of this county has been assured by partial development, and will not long be unused, since the opening up of the county by the railroad to Roanoke.

Several granite quarries and one of millstone have been opened.

Transportation is furnished by the Danville and New River railroad to Stuart, the county seat, which is the only village of note in the county, and a branch of the Norfolk and Western, from Roanoke to Winston, N. C., passes by the town.

Public schools, 82—white, 70; colored, 12.

There are churches of the different denominations located in different sections of the county.

This county offers the greatest inducements to settlers on account of cheap lands and probable rapid growth. Large bodies of land can be bought at low figures.

County taxes, \$1.68 on the \$100 assessed value of real and personal property, to-wit: 35 cents county levy; \$1.25 railroad tax; 8 cents school tax.

PITTSYLVANIA

Was formed from Halifax in 1787. It is thirty-five miles long and about twenty-six wide, and is the third county in area in the State. It contains 628,134 acres. Population, including the city of Danville, 59,941—males, 29,620; females, 30,321; white, 30,847; colored, 29,094.

It is bounded on the north by Staunton River, and has Banister and Dan rivers through the central and southern parts. These rivers and their tributary streams afford abundant water-power and much fertile bottom land. The surface is rolling and hilly, with some low mountains. The soil is light gray and gravelly on the hills, while the lowlands along the streams vary from a stiff red to a light, friable, sandy texture, and are very fertile.

Tobacco, corn, wheat, oats, rye and the grasses are the chief farm products. The tobacco raised in Pittsylvania is largely of the bright, high-priced kind, and is the main money crop.

By the census of 1880 Pittsylvania heads the list of counties in the production of tobacco and oats.

There is a very large area of fertile bottom lands, and on these large crops of corn, wheat, oats and hay are produced. The immense crop of bright tobacco is made on the thin cheap uplands.

LIVE STOCK.

	Number.	Value.
Horses and mules	6,169	\$258,842
Cattle.	2,942	75,510
Sheep.	2,847	3,871
Hogs.	11,163	19,551

By the census of 1880 Pittsylvania had much the largest number of mules in the State. Before the war it bred a number of the finest blooded race-horses.

The mineral wealth of this county is very great, and was illustrated in part at the World's Industrial Cotton and Centennial Exposition by the following specimens: Magnetic iron ore from Pittsville, Motley's and Calland's; asbestos from Pittsville and Walker's Church; barytes from Pittsville; manganese from Motley's and Pittsville; marble from Hurt's; granite from Dryfork; kaolin from Motley's, and very fine clays for brick and pottery. Gold has been mined in several places. There are two stone and marble quarries.

There are twenty-eight grain-mills in the county and a number of tobacco factories; also, several tanneries, one chair factory, and a number of steam saw-mills.

All parts of this county have convenient access to market by railroads crossing its territory. The Richmond and Danville and Atlantic and Danville enter from its eastern border, the Virginia Midland from the north traversing its greatest length, and the Danville and New River from the western line—all centre in the town of Danville. The Pittsylvania and Franklin Railroad from Rocky Mount to Elba, on the line of the Midland Railroad, taps a fine agricultural and mineral region in the northwest part of the county. The Atlantic and Danville Railroad passes through the southern part as far as Danville.

The wild animals comprise all the Virginia animals of the Middle section, from the hare to the deer, in the fields, and from the musk-rat to the beaver, in the waters.

Wild fowl: Turkeys, ducks, geese, pheasants, partridges, woodcocks and snipe, for game; and nearly all the smaller birds, and, in addition, eagles, owls, hawks and crows.

Danville is one of the chief tobacco marts of the State, and is a growing city, with many large manufacturing industries, and an important railroad centre. It is located on Dan River, near the southern end of the county, and is the terminus of four railroads. (See "Cities," in another chapter.)

Number of public schools, 122—white, 85; colored, 37.

Churches are numerous and of every denomination.

POWHATAN

Was formed in 1777 from Cumberland county. It is 25 miles long and about 15 miles wide, and contains 162,816 acres of land.

Population, 6,791—males, 3,428; females, 3,363; white, 2,358; colored, 4,433.

The climate here is such that work may be performed out of doors nearly the whole year, winter setting in the latter part of December and ending about the first of March, with rarely more than one spell of cold weather, when ice over three inches thick can be harvested for summer use. Snow rarely remains on the ground over a week, and is seldom over four inches deep, cattle doing well out of doors with but little feed nearly the whole winter. The summer here is mild and pleasant, the thermometer seldom ranging above 90°, and that only for a day or two. Here there are no cyclones, and the summer thunder-storms are mild, the wind and lightning rarely doing much damage.

The surface, off from the streams, is gently undulating, and the soil mostly gray and of a light, friable texture, with some stiff clays. The productions are tobacco, corn, wheat, oats and hay—tobacco being the principal money crop.

Its soils embrace almost every variety of red lands. Abounding in lime and mica makes them easily worked and well suited to grains and grasses—gray soils being more quick, and suited also for the grains, grasses and vegetables. They readily respond to the application of even the weakest manures, and show their appreciation of kind treatment for many years after the application.

The following was prepared for the first Hand-Book, 1879: "All of the grasses do well here, but clover, timothy, herds-grass, millet and orchard-grass are mostly raised. The vegetables and garden products, too numerous to mention here, are easily and abundantly raised, and embrace everything raised above the tropics. Particular notice is here called to our fruits, which in quality, variety and productiveness can hardly be excelled in any portion of the United States, except California, and but little subject to the ravages of insect life. The leading fruits here are apples, which can be kept the entire year round; peaches from June to November, grapes from July to December, pears from June to February, and later, if improved methods were adopted; strawberries, raspberries, plums, damsons, apricots, watermelons, canteloupes, etc. Blackberries, dewberries, whortleberries, strawberries and a large number of other kinds of fruit grow, of prime quality. The tobacco grown here has for many years taken the premium at our State fairs, and is considered the best of the dark tobacco sent to the Richmond market. In fact, prior to our late war this county obtained the handsome banner awarded by the Virginia Agricultural Society as the banner agricultural county of the State."

Fruits and the vine succeed well in the county, and are receiving much more attention. In fact, Powhatan is one of the finest apple counties of Middle Virginia.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,228	\$62,674
Cattle	2,758	28,546
Sheep	2,620	6,232
Hogs	2,326	4,598

The wild animals are: Deer, foxes, raccoons, opossums, squirrels, hares, otters, musk-rats, minks and weasels.

Wild fowls: On the river, geese, ducks, warloons, cranes and kingfishers; in the fields and woods, turkeys, pheasants, partridges, pigeons, plovers and doves.

Predatory birds: Eagles, owls, hawks, crows and buzzards.

Other birds: Robins, larks, blackbirds, woodpeckers, thrush, woodcock and snipe, and the smaller birds down to the humming-bird.

Coal, mica, kaolin, iron ore and graphite are found in Powhatan, specimens of which were exhibited at the World's Exposition at New Orleans. There are three coal mines in operation and one mica mine developed. There are nine grist and flour mills, one large brick works, employing five hundred hands, one spoke factory, one large tobacco factory, one fancy hardwood works, and one pipe factory.

Churches of all the prominent Protestant denominations are scattered through the county, seldom more than three or four miles apart, and a very large proportion of the population are members of the same. There are five Episcopal, three Methodist, three Presbyterian, one Reform Baptist, six Baptist (white), and thirteen Baptist (colored) churches.

There are public schools located all over the county, convenient to the school population, and also many private schools, the negroes having their schools separate from the whites. Number of public schools, 39—white, 22; colored, 17.

The geographical location of this county being in Middle Virginia, and midway between the Tidewater and mountain section, the diseases which find their habitat and prevail in those sections are here of the mildest forms. In fact, it can safely be asserted that no portion of the United States is more healthy than this. It is comparatively free from malarial influences, and below the cold and damp of higher altitudes. It is an excellent part of the State to live in, and immigrants will find cheap land, good homes, and an intelligent, hospitable people, with churches and schools convenient. The people here are largely the descendants of the French Huguenots, and the old colonial families which first settled Virginia are kind and noted for their genuine hospitality.

The following was furnished the Department in 1886 for the Hand-Book of that year:

"This county—as the great number of spear-heads, arrow-points, tomahawks and other Indian relics found everywhere indicates—was at one time a favorite hunting and battle-ground of the red man, and is happily named for one of their greatest chiefs. There is only lacking capital and well-directed energy to make it an Eden for the white man. Its natural advantages cannot be surpassed, lying as it does near the centre of Eastern Virginia, between the James

and Appomattox rivers, which constitute its northern and southern boundaries, respectively, and, with the numerous creeks and branches flowing into them, assure to the agriculturist a perfect drainage and an abundance of meadow land, besides furnishing an unlimited water-power for manufacturing purposes. Railroad facilities are indispensable to all business men—to the farmer especially so, as it assures to him a speedy market for his perishable products. A choice of markets is a second great consideration; proximity to, a third. This county offers all three. Through its eastern border runs the Richmond and Danville system of roads (the largest in the South); along its northern boundary the Richmond and Alleghany road, connecting Richmond and all points of the West. There is a third road built (now completed) through the centre of the county, and these, with the Appomattox River as a water-way, guarantee to settlers all needed facilities. Again, the centre of this county is only some thirty miles from Richmond, the capital of Virginia, and her largest market and manufacturing centre. Public roads are fine in summer, but heavy most winters.

PRINCE EDWARD.

Prince Edward was formed from Amelia in 1753. It is twenty-five miles long and about twelve wide, and contains 218,273 acres. Its population is 17,694—males, 9,994; females, 7,700; white, 7,770; colored, 9,924. The Appomattox River separates it from Cumberland and Buckingham, and by this stream and its tributaries the county is well watered.

These lands may be divided into three classes: First, the gray, soft soil, with stiff, red-clay subsoil. This class of land is generally considered the best for heavy, rich, dark, shipping tobacco, and, perhaps, but little inferior, if inferior at all, to the red lands, with red-clay subsoil, for wheat and red clover. The second class, red lands with stiff, red-clay subsoil, is considered as good, by some the best, for wheat and red clover and the other grasses, and makes a very fine article of dark, shipping tobacco when the seasons are specially suited to this crop. Then there is the third class, a gray, soft, sandy soil, with a yellow-clay subsoil; quite a quantity of this class is to be found mainly (though not exclusively) in the lower portion of the county, adjoining Amelia and Nottoway counties. This latter class produces finely the fine, fancy yellow tobacco used for wrappers and the finest grade of smoking tobacco. These lands produce corn, oats, all the fruits, vegetables and some grasses well; but will not produce remunerative crops of either wheat or clover. The bottom lands along all the streams are very productive in most of the above crops wherever properly ditched, and are really the most valuable lands in the county if they are even tolerably well attended to by drainage.

The soil is mostly formed from granitic gneissoid rock and is productive and easily improved.

Prince Edward lands are well suited to the various crops of Middle Virginia. They produce well tobacco, wheat, corn, oats, rye, millet, clover, timothy, red-top or herds-grass; good fruits and vegetables, such as apples, peaches, pears, grapes, apricots, strawberries, raspberries and all smaller fruits; watermelons, muskmelons and cantaloupes; vegetables, Irish and sweet potatoes, cabbages, beans, peas, onions, etc., and indeed they produce very well anything grown in this latitude. Few counties send out such a list of excellent fruits; seedlings that have come to be sold in all the nurseries originated in this county. The

following are some of these seedlings: Apples—yellow winesap, Gillespie sweet, Arnold cheese, Cunningham cheese, Price's cheese, Venable's Black Mercer, Ivanhoe, Allen's Jefferson and Woodson seedling; Richie's Early Joe, Venable's white. Grapes—most of these have become standard fruit. Forest trees—pine, poplar, black oak and sweet gum, silver maple, several varieties of hickory, white and red oak, willow oak, black and white walnut, mulberry, cedar, dogwood, wild cherry, locust, chestnut oak, slippery elm, black elm, cork elm, sycamore, birch, beech and willow. Fire-wood is abundant on every farm; it is of course a great convenience and great comfort. Oak bark and sumac have been important and profitable articles of commerce from this county. Until recently a bituminous coal mine was worked successfully and profitably in the county of Cumberland some miles north of the Prince Edward line, and one near has been discovered. Both of these are known to run through the county. Iron has been found, and kaolin and mica are there in abundance. Fine specimens of copper ore have also been found, and mineral paint of superior quality. The minerals are iron, mica, copper, kaolin, coal and building stones; springs are abundant, of the purest water. There is no healthier region in the world.

The wild animals are deer, fox, raccoon, opossum and squirrel.

Wild fowl, etc.: Wild turkeys, pheasants, partridges, ducks, snipes, robins, doves, mocking-birds, blackbirds, bluebirds, redbirds, and almost all small birds, besides buzzards, crows, hawks and owls.

Farmville, in the northern part of the county, is a thriving town, and a place of considerable importance as a tobacco-manufacturing centre, being the fifth largest in the State. Near that place are found celebrated mineral waters with a good proportion of lithia water.

Hampden-Sidney College and the Union Theological Seminary are located near Farmville. The State Normal School is also here. (See chapter on "Education.")

LIVE STOCK.

	Number.	Value.
Horses and mules	1,480	\$76,206
Cattle	3,511	33,640
Sheep	1,206	2,040
Hogs	3,207	6,963

Public schools, 61—white, 30; colored, 31.

Transportation facilities are afforded by the Norfolk and Western Railroad passing through the northern portion of the county, and the Richmond and Danville Railroad the southern.

The Farmville and Powhatan Railroad is a narrow-gauge road, which connects the town of Farmville with Bermuda Hundreds and the James River just at the point where the Appomattox unites with that stream, and so give to the citizens of the county three deep-water outlets—one at Norfolk *via* the Norfolk and Western Railroad; one at West Point *via* the Richmond and Danville Railroad, and the other at Bermuda Hundreds *via* the Farmville and Powhatan Railroad.

The taxation for county expenses, 25 cents on the \$100 value; schools, 10 cents; district schools, 10 cents; road tax, except one district, in which it is 15 cents.

A moral and hospitable people, good lands, with houses and fences, at cheap rates, are the strong inducements of this healthy region,

PRINCE GEORGE

Was formed in 1702 from Charles City. Population, 7,872—males, 3,906; females, 3,966; white, 2,732; colored, 5,140. Area, 171,016 acres.

The surface is generally level, and the soil on the rivers is very fine. Its north and northwest boundaries are formed by the James and Appomattox rivers, which give over forty miles of deep-water frontage to this county. The lands on these rivers are noted for fertility. Many broad and fertile bottoms are found on the numerous tributaries of these two rivers, on Blackwater River, and on the tributaries of Nottoway River in the southern portions. Lands are cheap, from \$4 to \$20, according to location and improvements.

The productions are wheat, corn, oats, hay, peanuts, cotton and tobacco. The light, warm lands of the southern portions of the county are well adapted to peanuts and cotton.

Live stock of all kinds do well. There is one large horse-ranche in the county.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,341	\$74,735
Cattle.	1,518	17,751
Sheep	1,005	2,093
Hogs.	1,976	5,729

The lands of Prince George are well adapted to fruit culture, especially the grape, and encouraging progress is being made in this section. Pears succeed wonderfully, and berries, both wild and cultivated, are abundant.

There can be no better trucking land than much of Prince George, and the thinnest and cheapest, the yellow clays, would, with fertilizers, produce the finest "bright wrappers." Cotton as good and large as the best Carolina upland has been produced in this county, and, as one of the crops in a diversification, would be profitable.

Marl of various sorts is abundant, and has been extensively used with good results. Near Coggin's Point, and at other places, is found the valuable green-sand marl; and this is the locality where the late Edmund Ruffin conducted many of his experiments in the use of marl and demonstrated its value.

One or more companies are now engaged in preparing these valuable marls for market. Properly used, the whole river front might be a garden.

Number of public schools, 37—white, 19; colored, 18.

Churches of the various denominations are numerous.

Taxation: County levy, 25 cents on \$100 value of property; road tax, 10 cents on \$100 value of property; county school tax, 10 cents on \$100 value of property; district school tax, 10 cents on \$100 value of property; total, 55 cents.

Much fine timber and cord-wood are shipped from this county to the North.

Fish and water-fowl are abundant, and the marshes furnish sora, woodcock, snipe, etc.

The facilities for reaching market are convenient to all parts of this county, and are furnished by the navigable rivers alluded to above, and by the Norfolk and Western Railroad, passing through the central portion, with a branch road from the city of Petersburg, near its western boundary, to City Point, at the confluence of the Appomattox and James, and by the Petersburg and Weldon Railroad, a link in the great Coast line, which skirts the western border of this

county from Petersburg to Rowanty Creek. City Point is a shipping point of some consequence, with a sufficient depth of water at its wharves for the largest class of vessels, and was used as a base of supplies for the United States troops during the siege of Petersburg. Near City Point, on the Appomattox River and the City Point Railroad, is a projected city, well located for trade and commerce. The tract contains several thousand acres, and on it have been developed fine white sandstone and the most valuable clay—vitrifying, pottery and fire clays; also, rich carbonate and green-sand marls. Part of the property has been laid out into lots.

PRINCE WILLIAM

Was formed in 1730 from Stafford and King George. It lies on the Potomac River, with Fairfax on the north, Loudoun and Fauquier on the west, and Stafford on the south. Area, 220,685 acres. Population, 9,805—males, 4,931; females, 4,874; white, 7,210; colored, 2,595.

The surface is rolling and well watered. The soil is generally good, and there are many well-improved farms.

About 400 acres were in grapes in 1888, and about three-fourths of the product was made into wine. Fruit of all kinds succeeds, and attention to producing and marketing fruit is increasing. Much attention is given to cattle and horses, and raising poultry for market has increased largely in the last few years.

Running from the Bull Run Mountain to the Potomac River, this county partakes of the character and productions of Piedmont, Middle Virginia and Tidewater. It has the fish and water fowl of Tidewater and the animals and fruit of Piedmont, with the climate of the Middle section.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,991	\$147,459
Cattle	7,584	94,874
Sheep	5,900	19,891
Hogs	4,778	10,381

The timber consists of oak, pine, chestnut, hickory and other woods.

Gold, copper, barytes, slate, soapstone, brownstone, marble and limestone are found in this county. Prince William was represented at the World's Industrial and Cotton Exposition by specimens of minerals. There are two brownstone and one slate quarry worked successfully.

Number of public schools, 53—white, 42; colored, 11.

Church buildings are good, and all denominations are represented.

The Virginia Midland Railroad traverses it in a southwest course, and the Manassas Division to Strasburg penetrates the western part, while the Alexandria and Fredericksburg Railroad runs through the eastern portion. The Potomac River furnishes water transportation and fine fishing shores. Occoquan River, forming part of its northern boundary, drains most of the middle and western parts. The public roads are well located and in fair condition; some good turnpikes used as public roads.

The tax for county expenses is 30 cents on the \$100 value of real and personal property.

The town of Manassas, at the junction of the Manassas branch of the Virginia Midland with the main stem, is a thriving and rapidly-growing place.

The battle of Manassas, celebrated as the first great conflict of the Civil War, took its name from the place, which was fortified as a strategic point of much importance. The country round is picturesque and of pastoral beauty, and is steadily improving.

Several industries and smaller manufactories are carried on in the county successfully.

PRINCESS ANNE

Was formed in 1691 from Norfolk county, and lies on the Atlantic Ocean and Chesapeake Bay, extending south to the North Carolina line. Area, 139,070 acres. Population, 9,510—males, 5,042; females, 4,463; white, 5,379; colored, 4,131.

The surface is level. The soil a sandy loam, resting on a yellow-clay subsoil, is easily tilled and is generally productive. The best lands are on Holland Swamp, Eastern Shore Swamp and on Back Bay.

It would be hard to find lands more productive of corn and potatoes, and both are profitably produced.

The productions are corn, oats, potatoes, trucks and fruits. A large part of the county is devoted to truck farming, and great quantities of vegetables and fruits are annually shipped to the Northern markets.

Stock-raising is not much pursued in this county, except for dairy and family purposes, and this stock is of good quality. Most attention is paid to hogs and cows. There are two dairies in the county.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,361	\$126,559
Cattle	2,593	21,478
Sheep	2,662	4,783
Hogs	5,583	9,109

Considerable attention is given to grapes, small fruit, berries and pears. Most fruits succeed fairly.

The shipments of fish, oysters and wild fowl from this county produce a very large revenue to the citizens. The fisheries on Cape Henry Beach, Lynnhaven Bay and river are very valuable. Lynnhaven Bay oysters are renowned for their size and fine flavor. Fish are of every variety. Ocean, river and creek are full of them. The sportsman can find abundance of wild geese, ducks, swan, and every variety of these, and of ocean fowls and birds. Sora, wood-cock, snipe, martin, reedbord and blue-wing blackbirds are in all the marshes; and partridges, robins, plover, doves and larks in the fields; and the woods are filled with singing and ornamental birds.

Deer, foxes, raccoons, opossums, squirrels, hares, otters and musk-rats are found in the county.

The timber consists of oak, pine, gum, cedar, cyprss, elm, holly and persimmon. The Seaboard district, comprising the northeast angle of the county, is perhaps the best timbered region of lower Virginia.

Eight saw-mills are engaged in making timber, mainly pine, oak, cypress, gum and ash. Many cypress shingles are made.

The transportation facilities are ample and convenient to all parts. The ocean front is about twenty-three miles in extent; Back Bay and North River are both navigable, and comprise a great extent of water fronts in the southern part, while the northern portions have the Eastern Branch and Elizabeth

River, Lynnhaven River and the bay shore. Besides these facilities for market by water, there is the Virginia Beach Railroad from Norfolk, passing across the county to a beautiful and most attractive watering-place called "Virginia Beach," on the Atlantic shore, and the Norfolk and Southern running through to the south. Public roads are fairly good where they have any attention.

County tax by levy is 40 cents on the \$100 of assessed value of real and personal property for county expenses.

Number of public schools, 36—white, 24; colored, 12.

Twenty churches of different denominations are scattered over the county, mainly Methodist, Baptist and Episcopal.

The temperature and rainfall are about the same as Norfolk. There is no county station of the State weather service.

With good lands, easily tilled, abundant supplies from the water, cheap and convenient access to market, and a climate both pleasant and salubrious, it would seem that here is a place where all should be prosperous and contented.

PULASKI

Was formed in 1839 from Wythe and Montgomery. It is twenty-five miles long and eighteen miles wide. The surface in some parts broken and in others level. Area, 195,763 acres. The soil is very good, and adapted to grain and grazing. Population, 12,790—males, 6,568; females, 6,222; white, 9,669; colored, 3,121.

The county is situated in the fertile and beautiful New River Valley, and is noted for its rich hay and grass and fine stock.

Great attention is paid by nearly all the leading agriculturists of the county to raising thoroughbred cattle, as well as thoroughbred horses, sheep and hogs.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,511	\$138,695
Cattle	7,904	154,287
Sheep	10,386	22,821
Hogs	4,788	9,653

Baltimore butchers concede that the beef from this county is among the best grass beef that comes to that market. The production of corn, wheat, rye, oats, buckwheat, grapes, barley and tobacco is equal to the best counties in the Southwest.

This county has an agricultural fair and good grounds near the county-seat. There are some creameries in the county, and the production of butter (always considerable) has increased.

The following are comprised among the wild animals found in Pulaski county: Deer, bears, foxes, opossums, skunks and hares.

Among the wild fowls are turkeys, pheasants and ducks.

Among the birds, partridges, robins and all birds found in Southwest Virginia.

The timber embraces all the varieties found in this section, viz.: oak, pine, hickory, poplar, cedar, cherry, ash, walnut, maple, locust, sycamore, etc.

There are twelve saw-mills, and oak, hickory, poplar and pine are made into lumber.

Its increased railroad facilities and mineral developments have been greater in the last eight years than in most counties in the State. From the Norfolk and Western Railroad, which is the main line running through the county from

east to west, two important branches have been thrown out—one starting from New River Bridge and extending a distance of eighty-four miles into Tazewell county, opening up the great Pocahontas or Flat Top coal field; and the other leaves the main line at Martin's, now Pulaski City, and extends up the New River and Cripple Creek valleys.

In 1886 the following description of the mining interests was prepared for the Hand-Book :

"In addition, within the last year the Belle Hampton Coal and Iron Company have built a narrow-gauge road from near Churchwood, on the New River road, to Tyler's Brush Mountain coal mines, a distance of four and a quarter miles, and is mining and shipping a quantity of stove and grate coal that commands the best price of any coal in the State.

"In 1878 the Altoona narrow-gauge road was built from Martin's to their valuable coal fields—a distance of eight miles—and has transported great quantities of coal, which has been used principally in smelting zinc ore at the Bertha Zinc Works, and at the salt furnaces of Colonel Geo. W. Palmer at Saltville.

"The coal on Brushy Mountain, on which are located the Altoona and Belle Hampton (or Tyler's) mines, crops out near the top of the mountain for a distance of about forty miles—through Pulaski county, and east and west into Wythe and Montgomery counties—and lays at a pitch of about thirty five degrees, and from the fact that the veins are thrown up again some miles south—on the Tract Mountain, in Pulaski, and Price's Mountain, in Montgomery—it is believed that the substratum of the whole valley between is one solid mass of coal."

There are valuable veins of limestone and fine building stone. Limestone, sandstone, or granite can be gotten, and a fine vein of millstone rock is found on Brushy Mountain, near the coal vein. Rock nearly equal to the French burr is gotten out near the Belle Hampton coal banks. There is also on the same mountain a vein from which valuable grindstones are made, and another that furnishes whetstones of superior quality. A vein of zinc ore fifteen feet thick has been found on the lands of D. S. Forney, and near here are the well-known "Bertha Zinc Mines," from which a supply of ore, yielding 45 per cent., is drawn for the furnace at Martin's, on the Norfolk and Western Railroad, that has a capacity of 1,300 tons (now more than 3,000) of spelter a year. In other places iron, lead, copper, manganese, etc., are found. One of the finest bodies of mineral lands in the United States is located partly in the extreme southwestern end of the county, beginning near the junction of Big and Little Island creeks with New River, and extending a great distance up the New River Valley. "Boon Furnace," in this county, is situated on a bed of this ore, and is regarded as one of the most profitable furnaces in the United States. It continued in operation all through the suspension, although having to haul its product fifteen miles to reach a shipping point. Valuable lead and zinc deposits occur in juxtaposition to these iron beds throughout their extent. Taken altogether, it is unsurpassed by any mineral section in the world. (Reported in 1886.)

There are many streams, affording valuable water-power for mills and manufacturing purposes. At Snowville, a thrifty little village, they have a woollen mill, a foundry, agricultural implement shops, and other machinery, and at New River Eridge a foundry and spoke factory, and other works are in contem-

plation in different parts of the county. The little station heretofore known as Martin's is now called Pulaski City, and promises to be quite a place. (For verification of this prediction see Pulaski City in chapter on "Towns.")

County taxation: There is levied on the \$100 value of real and personal property, 25 cents for county expenses, 10 cents for county schools and 20 cents for public roads.

There are two papers published in the county, and as many churches as can be found anywhere to the population. Schools are in a flourishing condition, and to all settlers a cordial welcome is extended by a people rarely surpassed for wealth, intelligence and virtuous traits.

Number of public schools, 54—white, 42; colored, 12.

Annual average temperature about 53°; rainfall, about 42 inches.

RAPPAHANNOCK.

This county lies on the Upper Rappahannock River, which divides it from Fauquier county. Its surface is high and hilly, but is fine grazing land. Its area is 175,691 acres, of which 31 per cent. is woodland. Population, 8,678—males, 4,301; females, 4,377; white, 5,863; colored, 2,818.

It is well watered by the Rappahannock River and its tributaries. Its lands are naturally very fertile, and produce fine crops of corn, wheat, oats, barley, etc., and are finely adapted to grazing. Fruits of all kinds succeed, especially apples and grapes. At one of the State fairs the finest Albemarle pippins were from Rappahannock.

There is fine timber in the county, consisting of oak, chestnut, pine, hickory, poplar and walnut. There are eight saw-mills, and all the woods are made into lumber; very little is shipped from the county. Large quantities of tan-bark have been taken from the mountains.

Kaolin and iron have been found, but no effort is being made to develop any minerals.

Many fine cattle and horses are carried to market from this county.

LIVE STOCK.		Number.	Value.
Horses and mules	.....	2,570	\$68,740
Cattle	.....	9,224	99,592
Sheep	.....	7,556	11,937
Hogs	.....	4,109	6,508

Washington, its county-seat, is near the centre of the county. Besides this there are Flint Hill, Woodville and Sperryville. At the latter place there is a large tannery, and there are many shops for the smaller mechanical industries.

Efforts have been made to construct a railroad into this county by a branch road from the Virginia Midland at Warrenton or Culpeper, which will doubtless be done before long.

There is one turnpike in the county, and the public roads are as good or better than most counties with as broken surface. Transportation is wholly by wagons.

Although off the railroad, this fine county offers great inducements to settlers in its fine lands, salubrious climate and beautiful scenery, and the grazier is practically not far from the great markets of the country.

Number of public schools, 52—white, 39; colored, 13.

Churches of the different denominations are scattered over the county.

Average temperature for 1892 about 54°; average rainfall for 1892 about 42 inches.

RICHMOND

Was formed in 1892 from old Rappahannock; is thirty miles long and about seven miles wide. Area, 117,252 acres. It lies on the north bank of Rappahannock River, which is navigable here for large vessels, and is watered by Rappahannock River, Moratico creek, Farnham creek, Totrisky creek, Rappahannock creek, Menokin creek and others.

Population, 7,148—males, 3,676; females, 3,470; white, 3,998; colored, 3,148.

The low-grounds are very fertile, producing fine crops of corn, wheat, oats and vegetables. The upper or forest lands are rolling, and the soil is a light sandy loam with red-clay subsoil, susceptible of a high state of improvement, and is worth, at present prices, from \$5 to \$25 per acre.

This is reported to be a good grazing country. Sheep especially are found very profitable.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,124	\$5,527
Cattle	3,987	43,087
Sheep	1,369	2,885
Hogs	3,533	6,200

The river along its front abounds in fish and oysters, the shad and herring fisheries being very productive and profitable. The oysters are of choice quality, as are the fish and wild fowl, and hundreds of thousands of dollars are brought to the county in exchange for these products.

The water fowl are: Ducks, geese, swan, brant, teal, etc.

Marsh birds: Sora, woodcock, marsh hens, snipe, reedbills, etc.

Field birds: Partridges, pigeons, doves, larks, robins, etc.

Forest birds: Mocking, cat, blue, red and blackbirds, woodpeckers, orioles, etc.

Wild turkeys are plentiful.

Wild animals are: Deer, fox, raccoon, opossum, squirrel, hare, otter, mink, etc.

There are 88,843 acres in timber of oak, hickory, chestnut, pine, cedar, walnut, poplar, dogwood and maple. Pine and oak are converted into lumber by seven saw-mills.

There are vast quantities of marl in this county (both blue and white marl), which has been used with good effect in improving the land, and will yet be made profitable commercially by mixing with the valuable clays for cements.

Warsaw, the county-seat, is situated about the centre of the county, six miles from the river, and contains a population of about 300.

There is daily communication with Baltimore, Fredericksburg and Norfolk by a line of fine steamers, and the Richmond and Chesapeake Railroad, now in expectation of construction, will pass through the county. The public buildings, bridges and roads are kept in good repair. Good farm labor is to be had at \$8 to \$10 per month; mechanics, \$1.50 to \$2 per day. This is an improving section, and the people are prosperous and contented.

Public schools, 34—white, 22; colored, 12.

Churches for all denominations are sufficient for the population.

Average temperature for 1892 about 53°; rainfall, about 42 inches. The State weather service at Warsaw, by the State Board of Agriculture, only began in November, 1892.

Rate of county taxation: For county expenses, 40 cents on the \$100 value of property; county schools, 10 cents; district schools, 10 cents; road tax, 5 cents. A capitation tax of 50 cents is added.

The winters are mild, cultivation of soil easy and cheap, living abundant and easily obtained, and access to market very convenient. Altogether this is a very desirable county.

ROANOKE

Was formed in 1838 from Botetourt. It is twenty miles long and about fifteen miles wide, and contains 195,581 acres. Population, 30,101—males, 16,420; females, 13,681; white, 21,082; colored, 9,019.

The surface is undulating, and in parts mountainous, all of its boundaries being crests of mountain ranges, and the streams flowing from it run in various directions, some northeast into the James, while Roanoke River, the chief stream in the county, flows southeast.

This county embraces, from its southern to northern borders, all the formations, with their peculiar soils, from the granites to subcarboniferous, in great part, however, shale, limestone and alluvial—all of more than average fertility; outside and nearer the mountains, belts of "freestone," rolling but adapted to culture and the production of certain crops.

Wheat is the principal cereal, the yield being on the average, say fifteen bushels. On the best lands it reaches thirty to thirty-five bushels. Corn, tobacco and grasses do well.

This is a splendid agricultural county. In 1889 the Commissioner of Agriculture asked of intelligent correspondents in every county, "What proportion of the owners of land make farming pay as compared with other occupations?" The answer was from Roanoke, "100 per cent." "Can sheep be profitably raised?" was also asked. The answer, "Yes, the most profitable of all stock."

LIVE STOCK.

	Number.	Value.
Horses and mules	2,727	\$136,160
Cattle	5,448	63,734
Sheep	1,448	2,285
Hogs	3,033	6,510

A large area of the southwestern part of the county is unequalled in the production of apples, especially the "Back Creek" pippin, being finer fruit than the celebrated "Newton" pippins, and becoming almost as well known. The lands so producing can be bought at low prices, and this industry can be pushed without exhaustion to far greater limits. Grapes succeed in this county; Concord for the table, Norton's Virginia for wine. About twenty-five per cent. of the grapes is made into wine.

Near Roanoke, the Moomaws have achieved an almost national reputation for the extent and good quality of their canned goods—peaches, berries and vegetables. Near Salem, H. Garst has also a similar establishment, representing hundreds of thousands of cans.

All the woods peculiar to central Virginia flourish here in the Valley. Forests and the heavy growth on the mountains would seem to invite enter-

prises of all kinds in which good, cheap and abundant timber is used. Oak, chestnut, pine, hickory, cedar and birch are abundant. Oak, chestnut and pine are converted into lumber.

The minerals of the county are iron ores in great abundance and purity, coal, slate and limestone. There are several mineral springs, the waters of which are highly recommended. Iron (magnetic and hematites) is in great abundance; also the forms known as *fossil, ferro-manganese, dyestone*. Zinc has also been found, it is thought, in large measures. In the mineral belts the lands are very low-priced and offer fine fields for investment. Iron, manganese, barytes and marble are now profitably worked.

Increasing attention to laying out and improving county roads is seen; in addition, a macadamized road runs through the whole length of the county. The Norfolk and Western and the Shenandoah Valley railroads give excellent facilities for trade and communication. In addition, the Baltimore and Ohio has a branch graded to Salem, which ought to be completed. A new railroad has also been located from Craig county to Roanoke, which will open up a splendid untouched mineral belt. The Norfolk and Western have built and are running a road from Roanoke through the tobacco counties of Southern Piedmont to Winston, N. C.

Salem, the county-seat, is prettily located on Roanoke River and the Norfolk and Western Railroad. Roanoke, the southern terminus of the Shenandoah Valley Railroad, is one of the most prosperous towns in the Valley, and is an important centre of trade and manufacturing industries, with large iron furnaces and tobacco factories. Within three or four years it has grown from a small village to a town of 6,000 inhabitants; so wrote "the scribe" in 1886, and it has grown to 25,000. (For particulars of the Magic City, see chapter on "Cities.")

Taxation for all county purposes, 50 cents on the \$100 valuation of real and personal property.

In addition to an excellent public school organization, it has Roanoke College, an institution thirty-four years old, of high grade, and well known in all the Southern States especially. Annual attendance between 150 and 200. Also, Hollin's Institute for young ladies, a well-equipped, well-known, prosperous and popular school. (See chapter on "Education.") Number of public schools, 65—white, 49; colored, 16.

Churches are numerous. The principal denominations are Baptist, Methodist (North and South), Presbyterian, Episcopalian, German Baptist or Dunkard, Lutheran, and some others.

Monthly average temperature for year ending November 30, 1892, 56°; rainfall about 41 inches.

ROCKBRIDGE,

Named from its most striking feature, the world-renowned "Natural Bridge," was formed from Augusta and Botetourt in 1778. It is thirty-one miles in length and twenty-two wide, and contains 401,589 acres. Population, 23,062—males, 11,722; females, 11,340; white, 17,931; colored, 5,131.

The surface is rolling and in parts mountainous. The crest of the Blue Ridge forms its southeast boundary; North Mountain and Mill Mountain are on the west border, and Little North Mountain penetrates the northern part.

North River flows through the centre of the county, and empties into the James near the south border. Water-power abounds in all parts of this county, some utilized. There are ten or twelve grain mills in the county.

The region lying between these mountain ranges is undulating and hilly, and has excellent soils, formed from limestone, producing fine crops of tobacco, grain and all the cultivated grasses. Fruit of all kinds succeeds well.

Lands vary in price, according to location and other circumstances, from ten to fifty dollars per acre.

The elevated mountain sides are, to a large extent, arable, and are fine grazing lands, and stock-raising is profitably carried on.

LIVE STOCK.

	Number.	Value.
Horses and mules	5,723	\$240,377
Cattle	10,465	107,345
Sheep	5,898	12,559
Hogs	5,847	10,821

Farm-dairying and poultry-raising are profitable.

Farmers as a class, notwithstanding the low prices of farm productions, are prosperous. Wages from ten to fifteen dollars per month.

The timber is abundant, and of valuable kinds, as oak, hickory, chestnut, pine, poplar, walnut, etc. Pine, poplar, oak and walnut are converted into lumber by about twenty saw-mills.

The minerals and mineral waters of Rockbridge are varied and valuable, and consist of iron ore, tin ore, arsenopyrite containing gold and silver, manganese, barytes, marble, gypsum and limestone, some of it hydraulic.

The "Buena Vista" iron mines are near the Richmond and Alleghany Railroad, and are exceptionally rich. No better site for an iron furnace can be found in Virginia than at or near Balcony Falls. The largest iron furnace in the State is "The Victoria," at Goshen, in this county. Its material is furnished from the mines near the Rockbridge Alum Springs, by means of a branch railway. Its capacity is from 125 to 150 tons a day.

The above paragraph is from the Hand-Book of 1886, and now three cities have been laid off in the locality of "Buena Vista"—one of them, Buena Vista, an incorporated city of over five thousand inhabitants, with some of the largest iron works and other manufactories in the State. (See chapter on "Cities.") Glasgow, on the fork of the James and North rivers, and Savernake, on North River, between Glasgow and Buena Vista, are laid off and have some buildings and manufactories, and have substantial bases in rich minerals for growing towns.

Magnesian lime for hydraulic cement is found on the Glendale estate, and has for many years been made into cement at Balcony Falls, just below. It is also found on the North River, just above Balcony Falls, immediately on the Shenandoah Valley Railroad. It has a high reputation and a demand for all that is made.

Tin has been found on Irish Creek, near Vesuvius station, Shenandoah Valley Railroad, very rich in yield and promising valuable results. It is now in process of development. It assays from 29 to 60 pure tin. Tin ore cassiterite, 200 pounds, from mine of Mrs. Martha D. Cash, Irish Creek post-office, was exhibited at New Orleans. These mines have been fully developed, are worked

with costly machinery, and considerable ore has been raised. (See chapter on "Mineralogy.")

Among the wild animals the bear, catamount, wild-cat, deer, fox, squirrel, hare, ground-hog, raccoon, opossum, hare, otter and mink are found. On the rivers, wild ducks, cranes and occasionally wild geese. In the forest, wild turkeys, pheasants, hawks, owls, woodpeckers, pigeons and thrushes. In the fields, crows, robins, partridges, larks, doves, catbirds, redbirds, etc. On the mountains, eagles, ravens and buzzards.

The mineral springs of this county—the "Rockbridge Alum," "Jordan Alum," "Cold Sulphur," "Wilson's White Sulphur" and "Rockbridge Baths"—have a wide celebrity, and are much resorted to for health and pleasure.

The Natural Bridge in this county is reckoned as one of the world's wonders. Tourists find in this county some of the grandest scenery of the continent. Besides the Natural Bridge, above mentioned, "Balcony Falls," where James River cuts its way through the Blue Ridge, and "Goshen Pass," on North River, have long been celebrated, and now that this region has become accessible, are daily drawing greater crowds. (See chapter on "Natural Curiosities.")

Transportation by rail is furnished by the Chesapeake and Ohio Railroad on the north, the Valley Branch of the Baltimore and Ohio from its northeast border to Lexington, where it connects with a branch of the Richmond and Alleghany, now James River division of the Chesapeake and Ohio Railway, the main stem of which runs for some distance through the southern border, and by the Shenandoah Valley Railroad, passing east through the eastern and southern portions.

County taxation: Average county and district levies for all purposes, 87½ cents on the \$100 valuation of real and personal property.

Lexington, the county-seat, a thriving town of nearly 4,000 people, is located on North River, near the centre of the county, and is the seat of the Virginia Military Institute and Washington and Lee University, two eminent institutions of learning. It is an active, thriving little city. (See chapter on "Cities.")

Number of public schools, 132—white, 106; colored, 26.

Churches of all denominations are numerous.

State weather service at Lexington reports monthly average temperature for year ending 30th November, 1892, 53°; rainfall, 35.90 inches.

ROCKINGHAM

Was formed from Augusta in 1778, and has an area rather greater than that of the parent county. It contains 1,079 square miles, or 606,775 acres, so that it is the largest county in the State. Population, 31,219—males, 15,333; females, 15,996; white, 28,485; colored, 2,814.

Every part of the county is watered by the Shenandoah and its numerous tributaries, and there is a large extent of rich meadow land, which produces large quantities of excellent hay.

Rockingham is one of the largest grain-producing counties in the State, and exports large quantities of flour, which has a high reputation in the Eastern markets. All the cereals thrive here, not only those cultivated generally, but buckwheat and barley.

And this is peculiarly a grass and cattle region, and a county of fine horses. Great numbers of choice cattle and horses are shipped from Rockingham to the Northern States.

LIVE STOCK.

	Number.	Value.
Horses and mules.	10,528	\$494,727
Cattle	21,534	259,326
Sheep	7,933	21,505
Hogs.	13,743	29,227

The mineral wealth of this county is considerable—iron, copper, lead and coal. Limestone is everywhere. Several varieties of marble are found here. Iron is now mined and there are many quarries of stone and marble. Rockingham has been for years among the first counties in the rearing of horses. By the census of 1880 it headed the list of counties for the number of hogs and the production of barley.

There are mineral waters of great virtue in Rockingham, the most resorted to being the celebrated "Rawley Springs," eleven miles from Harrisonburg.

Timber is abundant, consisting of oak, chestnut, pine, poplar, cedar and walnut, and these are utilized by fifty saw-mills.

Two great lines of railroad pass through this county—the Valley branch of the Baltimore and Ohio and the Shenandoah Valley road. These give excellent facilities for marketing the rich products—agricultural and mineral—of the county, and will rapidly attract immigration to this beautiful Valley.

There is also a narrow-gauge railroad from Harrisonburg to Elkton, connecting the two main lines, and facilitating communication between the different parts of the county.

The great Valley macadamized turnpike passes through this county, and the public roads are about as good as any of the Valley counties.

Harrisonburg, the county-seat, on the Valley branch of the Baltimore and Ohio, is a growing town of near four thousand inhabitants—the centre of trade of this rich county.

Number of public schools, 218—white, 204; colored, 14.

The Episcopalians, Methodists, Presbyterians, Baptists, Lutherans, Disciples, Mennonites, German Baptists, United Brethren and some other denominations have churches in the county.

Taxation: 50 cents capitation tax, and 55 cents on the \$100 value of property, which includes county and district schools, public roads, and interest on railroad debt.

At the New Orleans Exposition was exhibited a trap rock, locally called "ironstone," from a dyke forty to fifty feet wide, near the Augusta line, two miles southwest from Port Republic, near Leroy village. This particular block of trap, two and a half feet long, two feet wide, and two feet high, is an historic one, as it is the block that was used as an "anvil block" for a tilt-hammer in the blacksmith shop of Selah Holbrook, at Pork Republic, and on the anvil that was morticed into this block Selah Holbrook and his son, J. H. Holbrook, in 1843, made the sickles for Cyrus McCormick, that were used in the first McCormick reaper or harvester.

The wild animals, wild fowls and birds are the same as are generally found in the other Valley counties.

The Virginia State weather service reports from Dale Enterprise in this county as follows: "Monthly average temperature for twelve months ending 30th November, 1892, 54°. Monthly total precipitation for same period: Annual, 37.71 inches; average monthly, 3.14 inches.

A writer says:

“Several of our prominent farmers are developing quite an interest among our people in improved stock, especially of horses and cattle. Improved stocks of cows and horned cattle are general among our largest stock-raisers. Ours is almost exclusively an agricultural and stock-producing county, and is fully abreast of the times in improving these two important sources of wealth.

“Farms are made smaller and better cultivated; dwellings, barns, etc., are being built or improved and beautified all over the county.”

RUSSELL

Was formed in 1786 from Washington. It contains 370,153 acres. Population, 16,128—males, 8,418; females, 7,708; white, 14,923; colored, 1,203.

The surface is much broken, as the county lies among mountain ranges, and much of the land is not arable, but there are very fine lands in the valleys. They produce also ample supplies of grain, etc., for man and beast, and are making tobacco of very fine quality. Tobacco and grain are the market crops. In 1888, in answer to the question, “What kind of fertilizers are used?” the Commissioner of Agriculture received, “Barnyard manure.”

This elevated mountain region is noted for its healthy and bracing climate, and offers, with its cheap grass lands, kept fertile by decomposition of fossil limestones and feldspathic rocks, fine locations for persons desiring to go into the cattle business. The number of fat cattle annually sold is very large. Grazing and stock-raising is one of the principal industries of the people of Russell.

LIVE STOCK.

	Number.	Value.
Horses and mules	4,858	\$187,722
Cattle	11,474	158,266
Sheep	14,692	22,386
Hogs	5,447	6,330

The timber of this county is of the most valuable kinds, of large size, and in great abundance. It consists of oak, poplar, ash, walnut, cherry, cucumber, chestnut and hickory. All of these are made into lumber. There are fifty-four saw-mills in the county.

The minerals are iron ores, coal, lead, zinc, barytes, salt, sandstone, limestone and marble, and are found in great abundance, of good quality and easily mined. There are several mineral springs in Russell.

Coal and barytes have been developed and are now worked. There are quarries for limestone and marble at work.

It is drained by Clinch River, which is navigable by batteaux, and its tributaries afford immense amount of water-power, and are well stocked with game fishes. Moccasin Creek, a tributary of the Holston, waters a considerable portion of its southern part. There are ten water-mills for grinding grain.

Transportation is by rail and wagon. The South Atlantic and Ohio Railroad, from Bristol to Big-Stone Gap, passes through the county. There is one turnpike, and the public roads are fair.

Number of public schools, 83—white, 80; colored, 3.

Taxation: For county expenses, 50 cents; for county and district schools, 20 cents; for roads, 20 cents—making for all county purposes 90 cents on the \$100 value of real and personal property.

Churches are more numerous than denominations. In 1888 only three denominations were reported.

Average annual temperature, 53°; rainfall, 44 inches.

SCOTT

Was formed in 1814 from Lee, Washington and Russell. The surface is mountainous and rolling and the soil very good. Copper and Clinch rivers traverse the centre, and the North Fork of Holston the southern part.

Number of acres of land, 335,427. Population, 21,694—males, 11,270; females, 10,424; white, 20,726; colored, 968.

The productions are corn (in very large quantity), wheat, oats and rye. There are seventy-five grain mills in the county.

LIVE STOCK

	Number.	Value.
Horses and mules	5,187	\$219,752
Cattle	11,060	91,316
Sheep	8,034	8,090
Hogs	9,005	12,804

The grasses do well and grazing is profitable.

In 1880 Scott county produced 539,968 bushels of corn; also 40,656 gallons of sorghum, the largest quantity produced by any county in the State, and there are 125 maple-sugar orchards in operation. There are 2,000 acres in orchards of apples, peaches, pears, cherries, grapes, etc. About ten per cent. of the fruit is dried. Tobacco grows freely on some of the land, and is a profitable crop.

Two-thirds of the surface is in timber. The trees are: Several kinds of oak, poplar, walnut, ash, linn, beech, sycamore, elm and box elder. Oak, poplar, ash, walnut, and pine are converted into lumber. There are twenty saw-mills in operation. There are also six or eight bark mills.

This county is very rich in minerals, having abundance of iron ores, coal, copper, manganese, marble and limestone. It has many fine locations for mills and manufacturing establishments on the water-courses, with ample power to run any amount of machinery. Iron, coal and marble have been developed, and coal is being mined. In this county is found in great abundance a reddish, fossiliferous *mottled marble*, in which the colors are pleasingly blended with grayish-white. The dun-colored and other varieties are also found of fine quality.

There are many mineral springs in this county, both sulphur and chalybeate, and indications of salt water in several localities, producing a good percentage of salt.

There are 100 public schools in the county—99 white and 1 colored.

There are 75 churches, 35 of which are Methodist, 20 Mission, 10 Hardshell Baptist, and 10 Freewill Baptist.

This county has great capabilities, and with railroads would ship largely, both of the products of the farms and of the mines. It is in the south end of the fertile Clinch River valley, a beautiful and salubrious region. Fish and game are abundant. That wonderful curiosity, the "Natural Tunnel," is in the county. (See chapter on "Natural Curiosities.")

The average annual temperature is about 53°. The average annual rainfall is about 42 inches.

SMYTH

County was formed in 1831 from Washington and Wythe, and has an area of 310,926 acres, with a population of 13,380—males, 6,623; females, 6,737; white, 12,136; colored, 1,224. The county is about twenty-two miles wide from east to west, and about twenty-eight miles long from north to south. The Brushy Mountain, which constitutes its northern boundary, separating it from Tazewell county, rises from 4,000 to 4,500 feet above the sea level; while the Iron Mountain, constituting its southern boundary, separating it from Grayson county, rises in its White Top and Balsam peaks to the magnificent height of 5,848 and 5,720 feet, respectively, marking them as the highest in Virginia. The county is conveniently divided into three magisterial districts—the northern, Rich Valley district; the middle, Marion district; and the southern, St. Clair district. These three subdivisions of the county represent the three great geological or mineral, as well as the three great agricultural, belts of Smyth county; three or more separate systems of drainage, and three systems of forestry differing in character.

The Valley district comprises all that territory lying between the tops of Brushy and Walker's Mountains; the Marion district all that territory lying between the top of Walker's Mountain on the north and Rye Valley Mountain and Chestnut Ridge on the south; and St. Clair district all that territory lying between Rye Valley Mountain and Chestnut Ridge on the north, and the top of Iron Mountain on the south.

The timber is fine, comprising pine, oak, hickory, hemlock, poplar, ash, walnut and maple, and these are converted into valuable timber by fifteen saw-mills; in addition, there are large and valuable works of wood for various purposes.

The soils of the divisions of the county vary almost as widely as her mineral productions, which will be treated later on. There is a large area of level or river bottom land lying along each of the three rivers, affording alluvial deposits of great depth and fertility. These lands are very productive, being capable of constant cropping without deterioration, whether for corn, wheat, oats, cabbage, roots or grasses. Tobacco culture has been rapidly developed. Bright tobacco of the finest quality can now be grown in this region, and many planters have learned to cure and handle it so as to get the highest prices.

In the Rich Valley district is found thousands of acres of blue-grass of indigenous growth, and equal in every respect to the far-famed blue-grass lands of Kentucky. Besides the many delightful homesteads owned by happy and contented farmers in this lovely valley, there is located at Saltville the beautiful ten-thousand-acre blue-grass stock-farm of the Palmer and Bowman Company, who own the largest herd of registered short-horn cattle in the world. That the Saltville herd has attained high rank in the short-horn world is attested by the fact that its trade extends not only to the remotest sections of our country, but to this herd belongs the honor of having made the first shipment of short-horns ever made from the United States to the Spanish American States south of the equator, and also of having exported more cattle to South America than all other breeders in the United States together. This company also breed Clydesdale horses, saddle horses and Poland China hogs, and have a choice herd of Jersey cattle. Indeed, this entire section is noted for its fine horses, cattle and sheep.

LIVE STOCK.

	Number.	Value.
Horses and mules	3,033	\$127,744
Cattle	8,879	101,795
Sheep	9,442	14,126
Hogs	4,183	5,240

The middle valley has also its alternations of river-bottom and blue-grass upland, and is, in the main, generally productive of all the cereals and grasses, and is finely adapted to grape culture and market-gardening. Thousands of dollars' worth of cabbages are raised in and shipped from this valley to Southern points every year, and the small fruits reach perfection here in their wild state. The South Fork or Rye Valley is not as productive as the other valleys as a whole, but here are found many excellent farms. The fact is, for stock-raising and grain and fruit production very few sections of the United States deserve stronger mention, especially when considered in connection with its healthfulness, water supply and water-power. The county is absolutely free from malaria, and has never experienced an epidemic. The following table explains the cause for this flattering record: The average rainfall for the past eight years, as taken by A. T. Lincoln, Esq., of Marion, in a standard signal service rain-gauge, is 42.31 inches. The average for the winter months for this period up to 1891 was 10.61 inches; spring months, 11.72 inches; summer months, 11.90 inches, and the autumn months, 8.08 inches. The mean temperature for the same period was 52°. The mean temperature for the winter months was 35°; spring, 51°; summer, 71°, and autumn, 53°. The highest for eight years was 96°, which was never reached but once, while the lowest was 12° below zero, which was registered but once, and never falling below zero but three times. This winter has been the coldest in fifty years, and is wholly exceptional.

Minerals of great value abound. Besides salt, gypsum, lead and barytes, several varieties of iron ore, manganese and marble are found. The Staley's Creek Manganese and Iron Company have recently developed their property near Marion, containing over 6,000 acres. Iron ore found here is of good quality, and the developments already made warrant Prof. Lyman's apparently extravagant report that this field will yield several millions of tons of ore. Red hematite is found in quantity at Tilson's, in Rich Valley, and in many places along the river below here the surface indications warrant the belief that much iron ore exists. Near Atkins Tank, six miles east of Marion, James Long, of Philadelphia, owns ten thousand acres of very valuable ore land. Other properties in this vicinity are being developed with encouraging results. The Long property contains both iron and manganese.

Rye Valley, which is the continuation of the great Cripple Creek Valley, is exceedingly rich in the abundance and variety of its mineral resources. In the east end the Lobdell Car-Wheel Company operates a hot-blast charcoal furnace. The entire product of this furnace is consumed at their car-wheel works in Delaware. The iron ore is chiefly limonite, and of excellent quality; the ore is found both as wash ore and in large continuous veins. These ores show a range of from 42 per cent. to 65 per cent. metallic iron, and are remarkably free from objectionable properties. Several hundred tons of manganese has been hauled from this valley to Marion and shipped to Carnegie Bros., at Bessemer, and to the Cambria Iron Company, at Johnstown. Many varieties

of clays and glass sand are found—the clay showing 62.19 per cent. silica. Marble in many varieties is abundant in all three of the basins of the county. There is a large deposit of onyx stone near Marion. This stone is exciting a great deal of interest on account of its rare beauty and great value.

LEAD AND ZINC.

These ores are found in many places. Zinc ores are found in Rye Valley at several points, while lead has been found in Rich Valley and in the south spurs of Walker's Mountain and in the Rye Valley. Within the past few years a discovery of high grade galena ore was made in Rye Valley, which resulted in the purchase of nineteen acres of land by the Rye Valley Lead Company. This company sunk a shaft one hundred feet in depth, uncovering a vein of ore from four to fourteen inches in thickness. Seventeen tons, of two thousand pounds each, of this ore was hauled to Marion, a distance of ten miles, and shipped to New York for smelting. The car-load netted about \$600. The company is putting up machinery of fine workmanship and finish.

Salt and plaster have been mined and manufactured for many years at Saltville, bringing a large annual revenue into the county, which could be increased very readily five hundred per cent. The Holston Salt and Plaster Company manufactures about 500,000 bushels of salt annually, and the Buena Vista Plaster Company, operating at Saltville, markets about 10,000 tons of plaster annually. The veins of plaster extend up the valley from this point to near Chatham Hill, eighteen miles, and the plaster improves in quality as you follow the veins eastward. Extensive mining has been done at Plastersburg, Plaster Branch and Locust Cove. These plaster deposits are known to extend below the surface over six hundred feet, and are found here and there to extend from five hundred to fifteen hundred yards in width at many points. The superior quality of this plaster is well known.

Petroleum is believed by experts and others to exist at several points near Marion, but no prospecting has been done.

KAOLIN, FIRE-BRICK CLAY, ETC.

Clays that stand many of the ordinary fire-tests are found in nearly every section of the county. Before the late war the several iron forges that were then in operation in the county were lined successfully with these clays. Near Chilhowie station, ten miles west of Marion, are large deposits of potter's clay. A syndicate composed of Lynchburg parties recently purchased forty-four acres of this land from John L. Saunders, and organized the Virginia Vitrified Brick and Sewer Pipe Company. This company has erected extensive works for the manufacture of fine front buff brick and paving brick of the very best quality, and later on will manufacture sewer pipe and drain tile. The conjunction of valuable minerals in this section has just been turned into a use that will bring immense capital and increased population to this county. The close proximity of salt, lime, manganese and coal, and the prospect that pyrite of value is not very distant, has started what is destined to be the greatest and probably most profitable mineral investment and development in the State. The Lynchburg *Virginian* of January, 1893, says:

"The American Bridge and Iron Company of Roanoke, has received an order for 1,500 tons of iron work and castings for the Mathieson Alkali Works, at Saltville, the new enterprise which Mr. G. W. Palmer has succeeded in working

up. The present plant is to be torn down and a new and enlarged one erected in its stead. The American Bridge and Iron Company has four months in which to complete its contract.

"Mr. Palmer was in New York last week when he received a check for \$500,000, which amount is to be used in erecting and equipping the plant and starting the business on its new footing. The chief products of the works will be soda, ash and bleach, two of the most important chemical products in the world, and the parties interested in the enterprise have the assurance of handsome returns on their investment. The works will use about 100 tons of coal per day and will employ a large number of operatives. It is predicted that Saltville will in a few years become a town of 4,000 or 5,000 people in consequence of the location of the plant there."

Number of public schools, 74—white, 66; colored, 8.

The county levy is 90 cents on the \$100 value of property—50 cents for county expenses; 20 cents for schools and 20 cents for roads.

There are fifty churches in the county of the different religious denominations.

The Southwestern Asylum for the insane is located at Marion, the county seat, which is an active manufacturing town on the Norfolk and Western Railroad. This railroad passes entirely across the county, with a branch from Glade Spring, in Washington county, to Saltville, in this county. These, with fair county roads, afford reasonable facilities for transportation.

SHENANDOAH

Was formed in 1772 from Frederick. It contains 354,598 acres. Population, 19,671—males, 9,637; females, 10,034; white, 18,829; colored, 842

The surface is rolling, with some considerable mountains and valleys of great beauty and fertility—a very large proportion of the county being of the best class of valley land—disintegrated limestone—a strong and durable soil, admirably adapted to all the cereals and grasses of the climate.

In Shenandoah are some of the finest farms in the State, and live farmers who know the value of improved stock vie with each other and with those of the adjoining counties for the production of the best.

LIVE STOCK.

	Number.	Value.
Horses and mules	6,030	\$271,034
Cattle	12,226	121,371
Sheep	6,061	17,357
Hogs	7,558	14,351

Farms sell for \$30 to \$100 per acre. The uplands are fine for grazing, being natural blue-grass land.

The north fork of Shenandoah River traverses the entire length of this county, abundantly watering it, and giving power for manufacturing purposes. The valley of this river cannot be excelled for the beauty and fertility of its lands.

Much of the wheat raised here is exported in the shape of flour, which has a high reputation.

The census of 1880 shows Shenandoah to be among the best grain counties of the State, reporting its products as follows: Corn, 440,847 bushels; oats, 27,450 bushels; rye, 16,602 bushels; wheat, 351,635 bushels.

The minerals found here are iron ore, coal, manganese, galena, antimony, marble and limestone; very little developed as yet. The "Columbia" and "Liberty" furnaces in this county make good pig iron. There are valuable clays at Strasburg, which are profitably utilized.

Travertine marl of fine quality is found here as well as in other parts of the same valley.

Among the attractions of this county should be mentioned the Orkney Springs, a place of great resort for health and pleasure seekers from other States and all parts of Virginia. The Shenandoah Alum and Burners' White Sulphur Springs are also in this county, besides many fine mineral springs on the farms.

The Valley branch of the Baltimore and Ohio Railroad runs the entire length of this county from northeast to southwest, its line being of convenient access to all parts of the county.

The following forest trees are found: Oak, walnut, hickory, pine, chestnut, ash, cedar, locust and elm. Pine, oak, poplar and walnut are converted into lumber.

Public schools, 119—white, 115; colored, 4.

Churches are abundant, and all denominations represented.

New Market, Edinburg, Strasburg, Mount Jackson and Woodstock are enterprising and thrifty small towns. At the latter is held the annual agricultural fair, which is well located with good grounds. At Strasburg there are a number of factories, several for the manufacture of porcelain, pottery, etc., which are very successful.

Average annual temperature about 53°. Rainfall reported from Woodstock to November 30th, 34.98 inches. This includes three months of drought. The general average is about 42 inches.

County taxation for all purposes, 30 cents on \$100 of valuation of real and personal property.

SOUTHAMPTON

Was formed in 1784 from Isle of Wight. The surface is level and the soil productive. It is watered by Meherrin, Nottoway and Blackwater Rivers, which furnish broad and fertile lowlands and a good supply of fish. Area, 369,618 acres. Population, 20,078—males, 10,103; females, 9,975: white, 8,293; colored, 11,785.

The Blackwater River forms the eastern boundary of the county; the Meherrin its western boundary, while the Nottoway River flows through its centre. These rivers and their tributaries furnish abundant water-power for grist mills and manufacturing purposes. They are well stocked with a variety of the choicest fish. In 1888 there were twenty grain mills in the county.

The principal productions are corn, cotton, peanuts, trucks and potatoes. Soil a light and sandy loam, with red-clay subsoil. In 1880 Southampton produced the largest quantity of cotton of any county in the State.

The native grasses, as wire-grass and crab-grass, are very nutritious. Timothy, orchard-grass and clover grow luxuriantly.

There is now no doubt in the minds of the farmers of this county that hay of the finest quality can be produced here, and many of them are beginning to turn their attention to this important industry. The Japan clover seems to flourish here, and in many parts of the county it is gaining the mastery over the wire-grass.

Cattle do well, and need to be cared for only four months in the year. Sheep husbandry has not received that attention which its importance demands. It could be made a profitable enterprise with proper care; early and fine lambs can be raised and shipped North at great profit.

Here we have an excellent range for hogs. Large numbers are slaughtered annually, and thousands of pounds of the choicest bacon hams are sent to market and eagerly sought for by those who indulge in the luxuries of the table.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,922	\$163,743
Cattle	7,806	42,775
Sheep	1,429	1,442
Hogs	12,421	20,525

As to game, there is all common to this section—deer, fox, squirrel, rabbit, raccoon, opossum, wild turkey, partridge; and along the rivers, ducks, beaver, otter, etc.

Apples and pears of superior quality yield abundantly. Some of the largest and finest apple orchards in the State are found here. In former years—not so much so now—these orchards received much attention and great care, and yielded large quantities of apples, which were manufactured into the finest brandy and cider vinegar known to the trade, and for which the farmers received considerable revenue. Southampton apple brandy, as well as Southampton bacon, is to-day acknowledged as the best on the market. Peaches mature well, but late spring frosts prevent annual yield, and they are, therefore, not considered a sure crop. Grapes grow luxuriantly. The Scuppernong, Isabella, Concord, Clinton and other varieties are grown here abundantly.

Plums and cherries do well. Strawberries, raspberries and blackberries of the finest quality can be profitably grown. Cranberries grow to perfection on the alluvial bottoms.

Southampton is among the most thriving counties of this prosperous section of Virginia. The population is intelligent and industrious, and her principal staples—cotton and peanuts—skilfully handled, have brought much money into the community. This is the banner county in the State in the production of cotton, between five and six thousand bales being sent to market annually.

Cotton gins, in neat and commodious houses, are conveniently located in every part of the county, and no farmer finds any difficulty in having his cotton prepared in the nicest manner for market.

The soil is peculiarly adapted to the growth of sweet and Irish potatoes, which can be produced in great abundance. Stock peas, the black-eye pea, the black pea, the yellow pea and other varieties grow in all parts of the county to great perfection.

Watermelons, muskmelons and cantaloupes of the finest flavor and quality are produced. The soil, being light, warm and easily tilled, and being favored with a semi-tropical climate, is *par excellence* garden soil—admirably adapted to raising early vegetables for the great markets of the Northern cities.

Within the last few years a few farmers of this county have paid some attention to the production of tobacco, and samples of the bright flue-cured tobacco have been shown to several experts, and were pronounced very fine. It is no longer a question of doubt that much of our soil is admirably adapted to the

growth of the bright leaf tobacco. The above is extracted mainly from the Southampton Hand-Book.

The Seaboard and Roanoke Railroad runs through the southern portion of the county, and the Norfolk and Western passes near its northern limits. There is much valuable timber, as oak, pine, chestnut, etc. Large quantities of heart pine, white and red oak, cypress, dogwood, hickory, persimmon, ash, poplar, gum, walnut, sycamore, maple and ordinary pine are distributed over the entire county, and much of these are converted into lumber by the saw-mills, of which there are twelve in the county.

The Norfolk and Western Railroad has eight miles of its track along the eastern portion of the county; the Seaboard and Roanoke Railroad runs eighteen miles through its southern portion, and the Atlantic and Danville passes through its centre from east to west.

These roads, together with the Surry, Sussex and Southampton Railroad, now completed from James River to Courtland, the county-seat, afford to every farm in the county ample and convenient facilities for transportation.

The county levy (tax) for county expenses is 32 cents on the \$100 value of real and personal property.

Courtland (formerly Jerusalem) is the county-seat, and has a central location. Besides the court-house, clerk's office, sheriff's office and jail, there are six stores, two hotels, two churches and post-office.

Number of public schools, 86—white, 48; colored, 38.

Franklin is a thriving town, located at the head of navigation on Blackwater River. A regular line of first-class steamboats is established between it and Edenton and Plymouth, N. C., and it enjoys a lucrative trade with Eastern North Carolina. The Seaboard and Roanoke and the Atlantic and Danville railroads connect it with Portsmouth and Norfolk.

Ivor is a thriving village on the Norfolk and Western Railroad, and has a fine trade. Many thousand bushels of peanuts are shipped from this station. Some of the largest farmers in the county live near there.

Numbers of Artesian wells have been cheaply and successfully sunk in all the villages and in many parts of the county, and afford the purest water, and it is claimed that malaria has practically disappeared.

Temperature and rainfall are about the same as Surry county, reported by Spottsville station.

STAFFORD

Was formed in 1765 from Westmoreland. Population, 7,362—males, 3,694; females, 3,668; white, 5,893; colored, 1,469. Area, 163,908 acres.

The Potomac forms the eastern and the Rappahannock the southern boundary. Numerous creeks emptying into these rivers penetrate the interior, and are navigable to considerable distances. All these waters abound in valuable food fishes of many sorts, affording a handsome revenue to the owners and profitable employment to labor. They are also valuable for the water-powers utilized for mills, etc. There are ten grain mills in the county.

The surface is rolling, the soil naturally good, and readily responsive to ameliorating methods of farming. Marl and lime are being applied, and the effects are most beneficial.

The products are corn, wheat and oats, which are the main crops, and are profitably cultivated. Trucks and fruits are also profitable branches of agri-

culture. Clover and orchard-grass yield good returns. In 1889 there were twelve establishments for evaporating fruits. The average yield per acre of crops is about as follows: Wheat, eight to twenty bushels; corn, twenty-five to thirty bushels. Labor can be had from eight to ten dollars per month, with board or rations.

Taxes for county purposes, 30 cents on the \$100 valuation of property, real and personal.

The grazing and rearing of sheep and early lambs for the near markets of the District of Columbia and Baltimore add greatly to the farmer's profits.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,649	\$74,423
Cattle	3,801	39,641
Sheep	1,220	2,904
Hogs	3,043	8,835

This county has abundance of forest land covered with oak, hickory, pine, walnut, elm, ash and other trees belonging to this section of the State, and most of these are converted into lumber by six saw-mills in the county.

The minerals are gold, iron-ore, and excellent sandstone for building purposes. Mica has also been found in the county. Heretofore gold was profitably worked, but nothing is now being done in minerals. Stafford has very valuable clays, which, by themselves, for tiles and drains or in connection with the carbonate marls, might be profitably utilized for cement. Stafford has fine sandstone. The White House at Washington is built of white sandstone from Acquia Creek.

Access to market is convenient by water and by the Richmond, Fredericksburg and Potomac Railroad.

The people are kind and hospitable, the climate healthy and pleasant, land cheap, facilities for pleasant living and access to market all that could be desired. With all these advantages, it would seem hard to find a region better adapted to furnish good homes for the intending immigrant.

The religious and educational advantages are good, the various denominations being represented, and schools abundant. Public schools, 34—white, 28; colored, 8.

SPOTSYLVANIA

Was formed in 1720 from Essex, King William and King and Queen counties. It is twenty-three by seventeen miles in extent, and contains 258,879 acres. Population, 14,233—males, 6,828; females, 7,437; white 8,156; colored, 6,077.

The surface is mostly undulating, with much fertile bottom land on the numerous streams which form its drainage system. It lies between the Rappahannock and North Anna rivers, which form, respectively, its north and south borders. The interior is watered by the numerous tributaries of these rivers, and of the Mattaponi.

The wide bottom lands on these streams produce fine crops of corn, melons and vegetables; good tobacco is also raised in the county. The soil of this county varies greatly, much of the upland being of tenacious clay, while that of the bottoms is mostly of a light, sandy texture.

The productions, besides those mentioned above, are wheat, oats, rye and grass. Large quantities of poultry, vegetables and fruits are sold in the Fred-

ericksburg and other markets. Considerable attention is given to improved breeds of horses, cattle and sheep. Mr. A. P. Rowe has probably the largest and finest-bred herd of Jerseys in the State. Mr. C. H. Pearson has a fine herd of red-polled cattle.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,215	\$ 91,681
Cattle	5,245	48,228
Sheep	2,318	5,076
Hogs	3,920	6,811

The annual agricultural fair, held at Fredericksburg, has done much to improve the live stock of the county.

Dairying and poultry-raising, in connection with general farming, have increased, and are profitable.

The wild animals are the deer, fox, raccoon, opossum, squirrel, hare, otter and musk-rat.

On the rivers are found wild ducks and other tide-water fowls. In the woods and fields wild turkeys, pheasants, partridges, crows, blackbirds, blue-jay, red, blue, cat, mocking and snowbirds, robins, martins, larks, hawks, doves, etc. In the marshes: Sora, woodcock and ricebird.

Gold, iron, granite and sandstone are found in Spotsylvania.

The oldest furnace in America of which we have any certain descriptive knowledge was "Spotswood," in this county, described by Colonel Byrd in the "Westover Manuscript" a century and a half ago.

Gold, iron and pyrites have been developed. Gold and pyrites are now mined and worked. There are quarries of granite and sandstone in operation.

The timber consists of pine, oak, birch, poplar, willow, hickory, gum, etc. Pine, oak, poplar and hickory are made into lumber by eight saw-mills.

Fruit of all kinds, especially apples, pears and grapes, succeeds well. In 1888 two hundred acres were in vineyards, and about three-fifths made into wine.

Besides water transportation, this county has two railway lines—the Richmond, Fredericksburg and Potomac Railroad and the Orange and Fredericksburg Narrow-Gauge Railway to Orange Courthouse, where it connects with the Virginia Midland.

Taxes: County levy, 63 cents on the \$100 value of property, as follows: County expenses, 30 cents; county roads, 15 cents; county schools, 8 cents; district schools, 10 cents.

Public schools, 52—white, 33; colored, 19.

There are over thirty churches of the different denominations.

Fredericksburg is the principal city, and is one of the oldest in the State. It has a population of 6,000, and is located on the south bank of Rappahannock River at the head of navigation, with lines of steamers to Chesapeake Bay and Northern cities. (For description see "Cities.")

SURRY

Is one of the oldest counties in the State, being just opposite Jamestown, the cradle of the colony. It has James River for its northern boundary and the Blackwater for a portion of its southern. Area, 138,131 acres. Population, 8,256—males, 4,413; females, 3,843; white, 3,238; colored, 5,018.

The weather service of the State Department of Agriculture at Spottsville gives the monthly average temperature for the year ending November 30, 1892, as 56.8°, and the rainfall as 47.77 inches.

The lands are level and slightly rolling. The principal products are corn, wheat, oats, peanuts, lumber and fire-wood for Northern markets.

Yield of principal crops without manuring: Wheat, 12 bushels per acre; oats, 15 bushels; potatoes, 75 bushels; peanuts, 20 to 60 bushels; corn, 15 bushels.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,297	\$69,225
Cattle	2,353	19,446
Sheep	620	781
Hogs	5,767	8,007

All kinds of fruits are cultivated with success. Among the orchards is that of the Old Dominion Fruit-Growing Company, on James River, consisting of 27,000 standard Bartlett pear trees.

About two-thirds of the county is in timber, principally pine, white oak, hickory, poplar, beech, walnut, persimmon, cypress, holly and the gums. Pine, cypress, poplar and oak are converted into lumber. There are twelve saw-mills in the county—one that cuts 100,000 feet per day.

This county has twenty-two churches—three Episcopal, nine Methodist, eight Baptist and two Christian; and twenty-three public schools—nineteen white and four colored—with an average session of six and one-half months.

The rate of county taxation is 35 cents on the \$100 valuation of land and personal property.

The Atlantic and Danville Railroad runs from Danville to Claremont, a distance of 165 miles. The road crosses the counties of Greenesville, Brunswick, Mecklenburg, Halifax and Pittsylvania. Fourteen miles of the road is in Surry, and increased the assessment of lands in that section of the county \$100,000 from 1880 to 1885. The company runs a steamer from its wharves at Claremont to Petersburg, a distance of fifty miles.

The Surry, Sussex and Southampton Railroad has its water terminus in this county, and twenty miles of its line will be in the county, passing through the county-seat.

The Surry Lumber Company has eleven miles of narrow-gauge road connecting with the Atlantic and Danville Railroad at Spring Grove.

The Surry and Smithfield Railroad was chartered by the Legislature to run through the finest trucking section in the county to Smithfield, in Isle of Wight county. When built, it will open up a large section to market gardening for New York and Philadelphia markets.

Other shipping facilities are the James River, which forms the northeastern boundary of the county, on which ply daily the steamers of the Petersburg Steamboat Company, the Virginia Steamboat Company, the Old Dominion Steamship Company, touching at all the wharves, of which there are six in the county; and the Norfolk and Western Railroad, which passes on the southern side of the county.

Marl exists in great abundance and is very accessible. Wherever applied it has never failed to produce most excellent results. All parts of the county

near the river have it cropping out of the hillsides. Away from the river it is dug.

Claremont, the eastern terminus of the Atlantic and Danville Railroad, is a colony settled since 1880 by Northern people. A Northern capitalist bought the old Allen estate of 12,500 acres, and divided it into small farms. About three hundred families have settled there. This was in 1886. The town of Claremont, incorporated at the session of the Legislature of 1885, now has about three hundred population, four hotels, one newspaper, two churches (and another being built) and some eighteen or twenty business-houses, school-houses, money-order post-office, two daily mails, two trains daily and four lines of steamboats.

SUSSEX

Was formed in 1754 from Surry, the Blackwater River being the boundary between the two counties. By this river and its branches Sussex is watered in the northeastern parts, while the Nottoway meanders through the heart of the county, with many tributaries joining the main stream here. Number of acres, 298,062. Population, 11,100—males, 5,682; females, 5,418; white, 3,524; colored, 7,576.

The soil of Sussex, like that of the adjoining counties, is light in general, and is very productive on the streams. The crops for which it is best suited, and which are most cultivated, are peanuts, cotton, corn and oats. Marl is abundant, and has been used with very fine effect. Trucking is engaging the attention of most farmers. The principal wood is pine, of which large quantities are converted into lumber.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,760	\$91,145
Cattle	3,111	26,804
Sheep	761	1,098
Hogs	5,024	5,609

The grasses grow well, and much of the county is admirably adapted to sheep-raising, both for cheap wool and early spring lambs. The small breeds of cattle could be cheaply raised.

This county has fine railroad facilities, the Norfolk and Western passing through it in the northeast, the Petersburg and Weldon in the west, and the Atlantic and Danville from northeast to southwest, through its largest diameter. The construction of the last-named road has given a great impetus to the business of the county.

Waverly is a fine growing little business town, and near it is the Copperhonk Springs, a medicinal water of some considerable reputation. Lands are exceedingly cheap, and well adapted to pears, grapes and the small fruits and berries.

Public schools, 53—white, 28; colored, 25.

Churches of the different denominations are numerous.

The weather service of the State Board of Agriculture at Spottsville, in the adjoining county, gives the monthly average temperature for the year ending November 30, 1892, as 56.8°, and the rainfall at 47.77 inches.

The rate of taxation for all county purposes is 70 cents on the \$100 valuation of real and personal property.

TAZEWELL

Was formed in 1799 from Russell and Wythe. It is thirty-three miles long, with varying width, and contains 355,847 acres of land. Population, 19,899—males, 10,695; females, 9,204; white, 16,395; colored, 3,504.

This county is watered by Clinch River, flowing southwest, and by tributaries of New River, flowing northeast.

The surface is mountainous, but it is relieved by fertile valleys, many of them of considerable extent. One of the largest of these valleys, called "Burke's Garden," is famed for its beauty and fertility. The soil is mostly limestone and very fertile, the mountains even to their tops being covered with a luxuriant growth of blue-grass, which is indigenous here. The favorite and most profitable occupation here is grazing and fattening cattle, many of them being sent across the Atlantic to the markets of Great Britain.

LIVE STOCK.

	Number.	Value.
Horses and mules.	3,477	\$131,384
Cattle.	13,749	143,069
Sheep.	16,000	16,836
Hogs.	6,324	6,303

There are some dairies and creameries.

Grain and tobacco are the market crops of this fertile county. There are twenty-three grain mills in the county. Syrup is made from sugar maple and sorghum.

The timber is abundant and of large dimensions. Oak, walnut, cherry, hickory, elm, chestnut and other trees attain to great size and altitude, and the most valuable timbers are used in the ordinary construction of dwellings.

There are twenty saw-mills converting hemlock, oak, poplar, etc., into lumber, and several bark mills.

Burke's Garden, in this county, is almost a natural curiosity.

This elevated mountain basin, in the very heart of the great Clinch range, contains about 30,000 acres of the most fertile blue-grass lands, and is surrounded by high, almost mural, mountain escarpments, all round, except at one point on the north side, where the waters of this singularly beautiful basin break through and form Wolf Creek.

Wild game is abundant in the county. Among the animals are bears, deer, wild-cats, foxes and raccoons. Wild turkeys, pheasants, partridges and many smaller birds are plentiful.

Tazewell county is rich in minerals, having large deposits of the purest iron ores, coal, salt, gypsum, etc. Coal is being mined in great quantities and shipped by the New-River branch of the Norfolk and Western Railroad to Norfolk city for the coaling of ocean steamers, for which purpose it is well suited.

The great Flat Top mountain range, from which this coal is obtained, forms the northwestern border of this county, and is part of the dividing line between Virginia and West Virginia.

Immense quantities of coke and coal from this section go by rail East, West and South. The superiority of this coke is acknowledged now by iron-makers everywhere in reach of it. The proximity of the rich iron ores of this section

to this wonderful coal-field is destined to make it the iron-producing centre of the United States. Barytes is also mined and shipped from this county.

Pocahontas, close to which is located the principal coal mine, is a rapidly-growing town of some 8,000 inhabitants, on the New-River division of the Norfolk and Western road.

The iron ores and other coal deposits will be developed by the branch road into the central part of the county, and this opening up of the county will attract prospectors for the reported salt and gypsum, which are believed to exist in large quantity.

County taxes: For county levy, 50 cents on \$100 worth of property; public schools (capitation tax), 50 cents; district schools, 10 cents; public roads, 25 cents.

Number of public schools, 88—white, 71; colored, 15.

Newspapers: *Clinch Valley News* and *Index* (weeklies), Tazewell Courthouse; *Southwestern Press* (weekly), Pocahontas; *Headlight* (weekly), Graham.

There are over sixty churches in the county, owned by about ten different denominations.

Average annual temperature about 52°; rainfall, about 44 inches.

WARREN

Was formed in 1837 from Frederick and Shenandoah. It is twenty miles long and twelve miles in width, and contains 125,391 acres. Population, 8,280—males, 4,110; females, 4,170; white, 7,016; colored, 1,264.

It lies on the western slope of the Blue Ridge, and has Three-Top Mountain on its western border. The south fork of Shenandoah River passes through its centre. The surface varies from intervals and gently-sloping hills to steep mountain declivities. Water-power is abundant. There are sixteen grain mills in the county.

The soil is, in general, excellent—formed from disintegrated limestone, and (in places) from epidotes and hornblende, and produces excellent crops of corn, oats, rye, wheat, buckwheat and grass.

LIVE STOCK.

	Number.	Value.
Horses and mules	2,535	\$106,726
Cattle	7,863	59,275
Sheep.	4,664	14,262
Hogs.	3,268	6,966

Stock-raising forms one of the most important industries. Large numbers of fat cattle are annually sent to market.

Much care and attention is devoted to fruit-raising. Grape culture especially has been extensively and successfully carried on for many years, the epidote lands in the vicinity of the beautiful town, Front Royal, being admirably adapted to the growth of the choicest varieties of the vine. One of the oldest and largest vineyards of the South is located here, and much fine wine has been produced.

The minerals are iron ore, copper, ochre, umber, limestone and manganese. These have been developed; none are worked but limestone.

The timber consists of walnut, hickory, cherry, oak, pine and poplar. There are ten saw-mills in the county, a lumber manufacturing company at Riverton,

and a handle-bolt factory at Front Royal. These are large works, and the timber of the county is converted into lumber and worked up. There are two bark mills in the county.

The transportation facilities are excellent, and are furnished by the Shenandoah Valley Railroad, passing from north to south through the centre, and the Manassas Branch of the Virginia Midland Railroad, crossing it from east to west; also the Valley Branch of the Baltimore and Ohio running near the west line for ten miles.

Front Royal is a prosperous town of 1,600 inhabitants, three large hotels, with twenty-odd stores, two banks and several factories. Lands are worth from \$5 to \$10 per acre; good turnpikes and county roads, fine schools, and all that is needed is plenty of capital to develop the mines and improve the waste places.

Randolph-Macon Academy, at this town, is an elegant building belonging to the Methodist Episcopal Church, South, and has just been put in operation, with a competent corps of teachers.

Number of public schools, 74—white, 66; colored, 8.

Papers published are: Riverton *Gazette* and *Warren Sentinel* (weeklies) and *Zion Advocate* (monthly).

There are about twenty-five churches in the county, occupied by six different denominations.

Monthly average temperature for 1892 about 53°; rainfall for this dry year about 40 inches.

This is a most highly-favored and desirable region, enjoying a delightful climate, and having all the accessories for prosperity and pleasant living. There are numerous mineral springs. The streams teem with good fish, and much game is still found.

Rate of county taxation: 50 cents capitation tax for county purposes; 30 cents on the \$100 value of property for county purposes; 10 cents on the \$100 value of property for sinking fund for county debt.

WARWICK,

Now almost the smallest county in the State in area, and the smallest in population, was one of the eight original shires, and was densely peopled; there were in this little county six parishes. It contains 42,766 acres. Population, 6,650—males, 4,021; females, 2,629; white, 2,784; colored, 3,866.

The surface is level and the soil productive. The average yield of wheat is said to be fifteen bushels; of corn, twenty-six; of oats, thirty-five; if so, it is above the average of the State. The land is easily cultivated and very improvable, and there are large deposits of excellent marl. Trucking and market gardening are extending.

Wild animals of the county are deer, fox, raccoon, squirrel and hare. Besides the water fowls there are wild turkey, partridge, woodcock and sora.

Fish, oysters and wild fowl are abundant. Poultry is increasing.

LIVE STOCK.

	Number.	Value.
Horses and mules	576	\$32,635
Cattle	680	7,969
Sheep	885	747
Hogs	865	807

The timber of this county consists mainly of oak, pine, ash and gum. There is one large saw-mill making lumber of the oak, pine and ash, and at Newport News there are various wood works. There are no minerals in this county except marl.

Monthly average temperature for twelve months to 1st December, 1892, 59°; rainfall, 46 inches.

County taxes, 90 cents on \$100 value of property for county expenses and schools.

The population of Warwick was, in 1880, only 2,264; but since that time the extension of the Chesapeake and Ohio Railway to Newport News, in the southeastern angle of this county, has made an immense difference in the status of Warwick, Newport News having grown to be an important shipping point, resorted to by ocean steamers. This is, perhaps, the best coaling station on the continent; and there is here a grain elevator with a capacity of 1,500,000 bushels, and wharves on a grand scale, with depth of water to accommodate the largest ships that float.

The "boom" at Newport News was not merely a "boom." Town lots and farms in the vicinity have rapidly and steadily advanced in price, and there are plain indications of a "coming" city, which will extend from Old Point Comfort to Newport News. The Chesapeake and Ohio Railway has already arranged for a line of ocean steamers from this point to Europe, which will make Newport News not only a great coaling station, but a most important port for the exportation of grain and cattle. Another result will be a great increase in the production of truck and berries for the Western markets by the fast freight line established last summer.

Churches of all religious denominations are to be found in the county.

The public school system is enlarging. There are thirteen public schools—seven white and six colored.

Newspapers: *Commercial* (weekly) and *Caret* (weekly), at Newport News.

WASHINGTON.

This is one of the finest counties of the southwestern part of the State. It lies on the Tennessee border, and is bounded on the northwest by Clinch Mountain and on the southeast by the Blue Ridge. It contains 368,157 acres. Population, 29,020—males, 14,406; females, 14,614; white, 25,215; colored, 2,805.

It is watered by the three forks of the Holston River, which pass through its length, and, with their tributaries, furnish abundant power for mills and factories.

The surface is rolling in its central parts and quite rugged on its mountain borders.

Large quantities of fine timber have been shipped from this county, and there is still much left in the more remote sections. There are fifteen saw-mills making walnut, poplar, pine, hickory and cherry into lumber.

The climate of this region cannot be excelled for health and pleasantness, as is evidenced by the large stature and robust appearance of the people.

The soil is a rich limestone, producing fine crops of tobacco, the cereals and grasses.

The soil is adapted to almost all kinds of grain, and is susceptible of indefinite improvement; although it now yields from 25 to 75 bushels of corn to the acre,

and wheat 15 to 35; yet by proper culture this might be very nearly doubled, and the grasses of all kinds are produced in the greatest abundance at the rate of from one of three tons to the acre; that is, of such as timothy, clover and orchard-grass. Other grasses are more adapted to pasturing and are never so heavy, but are such as fatten stock rapidly and grow in great luxuriance. No county produces finer timothy and clover.

Washington county produced about 2,000,000 pounds of tobacco in 1884. The great bulk of the crop in this section is bright; generally of good body and excellent texture. Being grown on new lands, it is remarkably free from dirt and is very sweet.

Cattle, horses and sheep are reared and fattened in great numbers.

LIVE STOCK.

	Number.	Value.
Horses and mules	5,441	\$223,591
Cattle	11,487	114,818
Sheep	9,628	12,649
Hogs	7,348	9,358

Large quantities of poultry and eggs go east from this section.

The following wild animals are found: Deer, bears, foxes, raccoons, squirrels, etc.

Wild turkeys, partridges, pheasants and many other birds are plentiful.

This county is rich in minerals. On the west slope of the Blue Ridge are large deposits of a semi-magnetic iron ore, free from phosphorus and containing 69.74 of metallic iron. On Clinch Mountain are found continuous beds of fossil ore. Lead and zinc ores, salt and plaster are also found in this county. The Holston Salt and Plaster Company, at Saltville, are now producing annually 800,000 bushels of salt, and this company, together with the Buena Vista Plaster Company, produce 6,000 tons of plaster yearly. The salt wells at this place have the strongest brine known, and that, as well as the gypsum veins, are inexhaustible, and extend many miles into the adjacent county of Smyth.

There has recently been established works for making soda, ash and bleaching powder, which have just been greatly enlarged with a cash capital of \$2,500,000. Large and valuable machinery have been procured, and it is believed that the proximity of salt, coal, lime and manganese will make this the most profitable soda and bleach works in the country, and greatly increase the development of this and Smyth county, and add largely to the population of Saltville, their joint prospective city.

On the northeast border there are beds of salt and plaster, which will probably not be exhausted for ages to come. Mineral springs and mineral water of all kinds are abundant all over the county—sulphur, alum, chalybeate, etc.

Bristol, just on the county line, contains about 5,000 inhabitants, and is the western terminus of the Norfolk and Western Railroad, which traverses the county centrally. There is a branch of this road from Glade Spring to Saltville, near the Smyth county line.

The South Atlantic and Ohio Railroad runs from Bristol northwest to Big Stone Gap. There are four trains daily each way.

Abingdon, the chief town, has a population of over 2,500, and is a centre of refinement and culture. It has two female colleges and a fine court-house, in

which is held not only the county and circuit courts of the State, but the District Court of the Federal Government for the Western district of Virginia.

The school system is well established, and facilities for a common education or a collegiate course are here found convenient, accessible and cheap for all, and none need remain ignorant and uneducated.

Number of public schools, 141—white, 123; colored, 18.

Emory and Henry College, under the patronage of the Holston Conference of the Methodist Episcopal Church, South, is in successful operation in this county.

A writer said in 1886: "There is water-power enough in the county of Washington to exclude all steam-power or the necessity for it, except for transportation, for all kinds, from the turning of a grindstone up to the running of cotton factories with their thousands of spindles; and we have some of the best mill sites to be found, where nature has done everything but build the mills; and what a pity we have not the enterprise to have better mills. We want men and mechanics and a well organized system of labor—with such, no county could surpass our Washington. 'The harvest is great and the (right kind of) laborers are scarce.'"

Newspapers: *Virginian* (weekly), Abingdon; *Citizen* (weekly), Glade Spring; *Exponent* (monthly), Emory and Henry College; *News* (daily and weekly), Bristol.

WESTMORELAND

Is bounded by the Potomac and Rappahannock rivers, and counties of King George, Richmond and Northumberland. Average length, thirty miles; width, ten miles. Number of acres, 141,983. Population, 8,399—males, 4,287; females, 4,132; white, 3,802; colored, 4,787.

The surface is generally level, but broken and hilly about the sources of the streams. Soil good, light loam resting upon red clay—in some sections the red clay reaches the surface. It is well watered; pure springs abound, and very good well-water is in easy reach. Numerous tributaries of the Potomac penetrate inland.

Corn, wheat and clover are the staple products. Winter oats are cultivated profitably. Potatoes, sweet and Irish, grow well. The soil is very fine for all varieties of vegetables, and trucking is increasing. Orchard-grass and timothy are being introduced; their cultivation and raising clover-seed for market are a decided success. Good land yields from ten to thirty-five bushels of wheat; from twenty-five to fifty bushels of corn; from one and a half to two tons of hay.

There are seven grain mills in the county.

Unbounded supplies of fertilizing material lie in large measure unused on every farm. Marl in many locations, marsh mud and oyster-shell lime are within easy reach of every industrious farmer. Pyrite has also been found, but is undeveloped.

Many orchards of fruit—peaches, apples and plums—are found. There are several canneries.

Increased attention is being paid to sheep husbandry. Flocks of sheep average from \$2.50 up to \$6 per head of annual profit. Cattle do well; oxen often weigh 1,000 pounds at four or five years old, fed in winter upon dry fodder only, and then upon the natural grasses of the county.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,509	\$68,852
Cattle	4,773	47,230
Sheep	2,072	4,596
Hogs	3,680	6,620

A third of its surface is woodland. In many parts are found pine, four or five varieties of oak, hickory, cedar, chestnut, locust, poplar and gum. Valuable white oak is only found, however, in small detached parcels. Also walnut, birch, beech, maple and sycamore.

There are eight saw-mills in the county, which make valuable lumber, mainly of the poplar, oak, pine, walnut, chestnut and hickory.

Lands are easy of cultivation; capable of sustaining a population ten times as numerous as that it now has.

Regular lines of boats give access almost daily to Washington and Baltimore. The inlets abound in oysters, fish and fowl.

The wild animals and wild fowls are those found along the lower Potomac counties.

Good public schools, 40; several private schools; churches, 29—Baptist, Methodist, Episcopalian.

Number of public schools, 40—white, 23; colored, 17.

County taxes: 50 cents capitation tax and 48 cents on \$100 value of property for all purposes.

Monthly average temperature for 1892 to November 30th, 58°; annual rainfall about 43 inches.

WISE

Was formed in 1855 from Lee, Scott and Russell counties. It has 454,872 acres of land. This county is watered by several considerable streams flowing into Russell's fork of Big Sandy River, and by Powell's River and other streams which flow south into Clinch River. Population, 9,345—males, 5,148; females, 4,197; white, 8,763; colored, 582.

Wise county lies on the Kentucky line, and is located amongst the lofty ranges of mountains which traverse this Trans-Appalachian country.

Deer and all the various smaller wild animals are found, with an occasional bear and wild-cat. The wild fowls and birds generally found in the Southwest mountains are abundant in this county.

The soil, in some parts formed from limestone rocks, is of good quality and well adapted to grain and grass. Other sections, formed from disintegrated sandstone, have poorer soils, but the lands produce corn, vegetables and fruits and are well suited to the grape, and to pasturage, especially of sheep.

LIVE STOCK.

	Number.	Value.
Horses and mules	1,474	\$85,030
Cattle	4,727	64,081
Sheep	4,055	4,082
Hogs	3,740	4,267

The greater part of the area of Wise county is still covered with original forests of valuable timber, such as oak, chestnut, walnut, poplar, cherry, pine,

etc. The cherry is notably abundant and of large size, and poplar trees of enormous size, some of them six and eight feet in diameter, with long, straight trunks seventy-five to eighty feet to the limbs.

There are eight saw-mills in the county. Poplar, oak and pine are those mainly converted into lumber.

The minerals of this county are iron ores; coal (bituminous, splint and cannel), in great abundance and easily mined. Lead and silver have also been found, but not yet in paying quantity. Limestone and valuable sandstone for building are abundant. Coal and iron have been fully developed and are now being mined. There is a large furnace at Big-Stone Gap.

The free-school system is well established in this county—every neighborhood has the advantage of from five to seven months' school each year. Number of public schools, 42—white, 41; colored, 1.

There are about thirty churches in the county—Regular Baptist, Missionary Baptist, Northern and Southern Methodist and Presbyterian.

There are two weekly newspapers, the *Norton Herald* and *Big-Stone Gap Post*.

The great need of this section is access to market for its very valuable timber and minerals, which to a considerable extent has not been supplied by the construction of several railroads through this county. The Norfolk and Western, Louisville and Nashville, and South Atlantic and Ohio railroads have stations at St. Paul, Coburn, Tacoma, Norton and Big-Stone Gap, and some other unimportant stations.

The county public roads are in a bad condition.

The county levy for county expenses is 25 cents on \$100 value of property assessed.

The State weather-service station at Big-Stone Gap reports monthly average temperature for the twelve months ending November 30, 1892, 51.9°. Total precipitation for the same period: Annual, 55.05 inches; average monthly, 4.59 inches.

WYTHE

Was formed in 1790 from Montgomery; contains 315,464 acres. Population, 18,019—males, 9,098; females, 8,921; white, 14,849; colored, 3,170.

This county is an elevated mountain region, with three fertile valleys between the mountain ranges, which traverse it mainly from northeast to southwest. The soil in these valleys is very productive, and gives abundant returns in large crops of grain, hay and fine pasturage for cattle.

LIVE STOCK.

	Number.	Value.
Horses and mules	8,966	\$169,520
Cattle.	11,625	143,818
Sheep.	15,182	29,844
Hogs.	6,639	8,963

The mountains are rugged and broken, but they are filled with abundant stores of mineral wealth, and are clothed with finely grown trees of various kinds—oak, hickory, chestnut, ash, pine, maple and walnut.

Bears, deer, wild-cats, foxes, squirrels, raccoons and other small animals are found in the county.

Its wild fowls are turkeys, pheasants, ducks, partridges, robins, larks, black-birds and many others.

The minerals found in this county are immense in amount and value, and comprise iron ores, zinc ores, lead ores, manganese, barytes, asbestos, coal, marble, soapstone, gypsum and kaolin. These minerals have been developed and proven to exist in immense deposits, and are now being largely worked. There are in operation many blast furnaces, forges, smelting works and rolling mills.

Fine timber of the following varieties are found in Wythe: Oak, pine, poplar, cherry, walnut, cedar, chestnut and ash. There are ten saw-mills, converting the oak, walnut, pine and poplar into lumber.

The Norfolk and Western Railroad runs through the centre of this county, and has a branch road leading from Pulaski City into the great mining region in the southeast part of Wythe.

Wytheville, the chief town and county-seat of Wythe, is a beautiful and flourishing place, possessing many attractions and solid advantages. Its healthful and bracing climate has caused it to become a great place of summer resort for Southerners and lowlanders, and it is the central town of a great mineral region, and a fine pastoral and farming country as well. Population, 3,000.

Two weekly newspapers are published in Wytheville—the *Enterprise* and *Dispatch*.

The State weather service at this town began reporting for August. The year ending 30th November shows about the same temperature as Marion, in the adjoining county, to-wit: 53° annual temperature; rainfall (annual), 42.42 inches.

Wythe is drained by New River and many of its tributaries which arise among lofty mountains, and, being fed by bold and constant springs, have abundant fall and volume during the driest seasons, affording vast amounts of water-power for mills and factories.

There are twenty-six grain mills in the county, and a large number of iron furnaces, four wool factories, several manufactories of wood, six leather and tanning industries.

Number of public schools, 81—white, 70; colored, 11.

Churches of all denominations are in the county—over fifty in number.

Newspapers are the *Enterprise* (semi-weekly), *Dispatch* (weekly), and *Journal* (weekly).

The following was prepared for the Hand-Book of 1886:

“The average is 400 acres to the farm, and there is not an acre in good tilth in the county but will set itself into Kentucky blue-grass and white clover. All cultivated clovers and grasses do well here, and the highest hills will produce as good hay, and when in tilth nearly as much as creek and river bottom—one and a half to three tons per acre. Grain—corn on sod, 30 to 80 bushels per acre, average 40 bushels; wheat on same, 18 to 22 bushels; on stubble, 10 to 12; rye, a little better yield; oats, not so sure as on freestone of the same tilth. Garden vegetables of all kinds in abundance. All lands in the county in good tilth will produce a large heavy tobacco crop, but it grows too heavy; this is why not more is raised in this county. Fruits of all kinds in abundance—cultivated and wild.

“Thirteen charcoal iron furnaces in this county, all working on the New River and Cripple Creek brown hematite ores, making No. 1 car-wheel iron, boiler-plates, bar iron and steel. The ores run 53 to 57 per cent. iron. We also claim that with coke we can produce this same at \$11 per ton, and this state-

ment has not been denied by iron men, when on the grounds to see for themselves. The Norfolk and Western Railroad extension, when finished, up New River and Cripple Creek will bring the Pocahontas coal direct to each furnace on the line through this county, and over a standard gauge, first-class railroad, well ballasted and equipped. Limestone of the best quality for flux at all the furnaces.

"We invite all, and especially our New England friends, to bring their families and come down and pay us a visit and see for themselves. We invite you as one family to come and settle and make your permanent homes with us. We also extend the same invitation to people in other lands who will be pleased to bring their capital and settle with us."

YORK

County was one of the original shires into which Virginia was divided in 1634. It was first known as Charles county. It is bounded by Chesapeake Bay on the east, York River on the northeast, and by James City county and Warwick on the west and southwest, and by Back River, which separates it from Elizabeth City county, on the south. It is thirty miles long, with a mean breadth of five miles. It is divided into four districts, viz.: Bruton, Nelson, Grafton and Poquosin. The population is now 7,596—males, 3,877; females, 3,719; white, 3,201; colored, 4,395.

The Disciples, Baptists, Episcopalians, Presbyterians and Methodists each have churches.

There are numerous public schools in every district, both for the white and colored, to-wit: white, 14; colored, 11.

Bruton produces corn, oats, potatoes, etc., in abundance. Nelson and Grafton are devoted mostly to trucking. In Poquosin District the people are largely engaged in building of canoes, which have a world-wide reputation.

Apples, peaches and pears are grown all over the county and shipped to the Northern markets.

The dairy industry has not been developed; one person has just commenced the business.

There are no minerals in this county except an abundance of marl.

The timber has been cut all over the county, and but little is now left but second growth. Persons are engaged in gathering holly and running cedar, etc., (of which there is an abundance,) for decorations, and sending them North.

The water-courses are numerous. This county is intersected by several navigable creeks, and by Poquosin River, which, with York River and the Chesapeake Bay and Back River, afford excellent shipping facilities.

The Chesapeake and Ohio Railway passes through a small portion of the county. There is one station in the county, and several contiguous thereto.

The county roads, with proper drainage, could be made first-rate.

There are no manufactures in this county.

The various rivers and creeks of this county afford splendid oysters and fish in abundance. Pound-nets and fykes are set along the shore; fish of every kind and variety are caught. Oysters are produced by simply planting shells; upon these the spat of the oyster strikes and in a few years becomes a good-sized oyster. This industry is carried on to a great extent, particularly in Poquosin District.

Game is very plentiful in this county. Squirrels, hares, deer, turkeys, partridges and wild geese and ducks afford excellent shooting.

Bruton District is particularly well adapted to stock-raising. Sheep have proved profitable.

The first battle of the late war was fought at Big Bethel, in this county, and the last battle of the Revolution was fought at Yorktown, the county-seat. This place is in Nelson District, on York River, 11 miles from its mouth, 33 from Norfolk and 70 from Richmond. It was established by law in 1705, and had considerable commerce. It is now in a bad condition, but it is believed that it has a bright future, as it will one day be the terminus of a great railroad. There is already a prospect of a short road from Yorktown to Jamestown. On the main street of Yorktown is the Nelson residence, the home of Thomas Nelson, the Governor of Virginia during the Revolutionary War. Yorktown is memorable in history as the spot where, on the 19th of October, 1781, the army of Cornwallis surrendered to the combined armies of America and France, which practically ended the war. The place of surrender is about half a mile from the town, on the south side of the road to Hampton. One century after the Revolution the Government erected a monument near the spot. On the top of the monument is the Goddess of Liberty. About the centre are inscribed the words: "One Destiny, One Country, One Constitution." On the side facing the road is written: "At York, on October the 19th, 1781, after a siege of 19 days by 5,500 American and 7,000 French troops of the line, 3,500 Virginia militia under command of General Thomas Nelson, and 36 French ships of war, Earl Cornwallis, commander of the British forces at York and Gloucester, surrendered his army—7,251 officers and men, 840 seamen, 244 cannon and 24 standards—to his Excellency George Washington, commander-in-chief of the combined forces of America and France, to his Excellency the Comte de Rochambeau, commanding the auxiliary troops of his Most Christian Majesty in America, and to his Excellency the Comte de Grasse, commanding in chief the naval army of France in Chesapeake."

On right side: "The treaty concluded February 6th, 1778, between the United States of America, etc., declaring the end of the present defensive alliance, etc."

River side: "Erected in pursuance of a resolution of Congress adopted October 29th, 1781, and an act of Congress approved June the 7th, 1880, to commemorate the victory by which the independence of America was achieved."

Left side: "The provisional articles of peace concluded November the 30th, 1782, and the definitive treaty of peace concluded September the 3d, 1783, between the United States of America and George the Third, King of Great Britain and Ireland, declare his Britannic Majesty acknowledges the said United States, viz.: New Hampshire, Rhode Island and Providence Plantation, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina and Georgia, to be free, sovereign and independent States."







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